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RF Exposure Evaluation Report

Product: Yanshee Robot

Trade mark : UBTCH

Model/Type reference : ERHA101

Serial Number : N/A

Report Number : EED32L00193804 **FCC ID** : 2AHJX-YANSHEE-1

Date of Issue : Aug. 26, 2019

| IEEE C95.1 2005

KDB 447498 D03

Test Standards 47 C.F.R. Part 1, Subpart I, Section 1.1310

47 C.F.R. Part 2, Subpart J, Section 2.1091

Test result : PASS

Prepared for:

UBTECH ROBOTICS CORP LTD

16th and 22nd Floor, Block C1, Nanshan I Park, No.1001 Xueyuan Road, Nanshan District, Shenzhen City, P.R.CHINA

Prepared by:

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2 Version

Version No.	Date	Description	/05
00	2019-08-26	Original	(67)
400			









































































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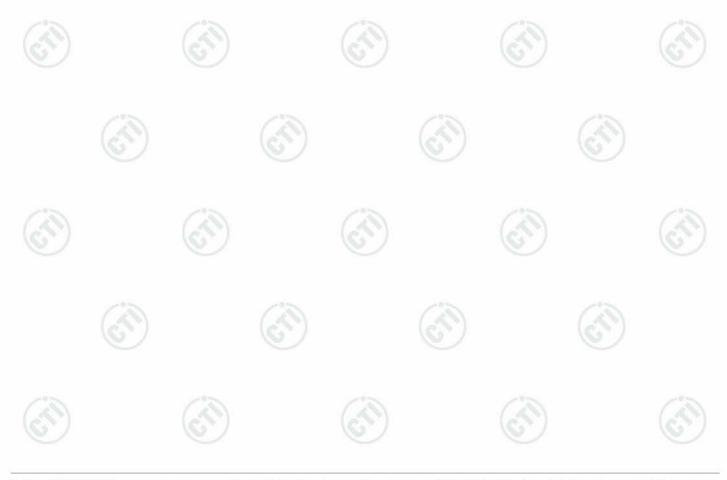
4 General Information

4.1 Client Information

Applicant:	UBTECH ROBOTICS CORP LTD				
Address of Applicant:	16th and 22nd Floor, Block C1, Nanshan I Park, No.1001 Xueyuan Road, Nanshan District, Shenzhen City, P.R.CHINA				
Manufacturer:	UBTECH ROBOTICS CORP LTD				
Address of Manufacturer:	16th and 22nd Floor, Block C1, Nanshan I Park, No.1001 Xueyuan Road, Nanshan District, Shenzhen City, P.R.CHINA				
Factory:	UBTECH ROBOTICS CORP LTD BAOAN BRANCH				
Address of Factory:	1-2 Floor, B Block, Huilongda Industry Park, Shilongzai, Shiyan Street, Baoan District, Shenzhen City, P.R.CHINA				

4.2 General Description of EUT

Product Name:	Yanshee Robot	
Model No.(EUT):	ERHA101	75
Trade Mark:	UBTCH	(20)
EUT Supports Radios application	4.1 BT Dual mode, WiFi 802.11b/g/n(20MHz)	











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4.3 Product Specification subjective to this standard

1047 /	•	CAT .		16.4			1674	
Frequency Range:	BT: 2402MHz to 2480MHz WIFI: 2412MHz to 2462MHz							
Modulation Type:	GFSK, 8DPSK, π /4DQPSK, OFDM, DSSS							
Number of Channels:	BT 3.0: 79 Channels BLE 4.1: 40 Channels WIFI: 11 Channels							
Test Power Grade:	802.11b:18 802.11g:12/11/11 802.11n:11/11/10							
Test Software of EUT:	War exe (mai	nufacturer	declare)					
Antenna Type:	Chip antenna	(C.)		(5,7.)			(6)	
Antenna Gain:	2.4GHz	Antenna G	ain : 1.50	0 dBi (Numeric	gain: 1.41)			
Dower Standy	AC adapter	INPUT	MODEL: HKA03609640-8A INPUT: 100-240V 1.5A, 50/60Hz OUTPUT: 9.6V===4.0A					
Power Supply:	Battery: Model: Yanshee 1.1-2S1P Capacity: 7.4V, 3000mAh/ 22.2Wh)				
	ВТ							
-0-	GFSK:			6.00 dBm	(3.981 mV	٧)	- 0 -	
(12)	π/4DQPSK:			3.00 dBm	(1.995 m\		16	
(6,2)	8DPSK:			3.00 dBm	(1.995 m)		100	
	BLE:			6.00 dBm	(3.981 mV	<u>(V)</u>		
Conducted Peak Output	Wi-Fi							
Power:	IEEE 802.11			18.50 dBm	(70.795 m			
	IEEE 802.11		13	18.00 dBm	(63.096 m			
(62.)	IEEE 802.11	n HT 20 M	ode:	17.00 dBm	(50.119 m	ıW)		
	The Conducted Peak Output Power data refer to the EED32L00193801, EED32L00193803					report		
Sample Received Date:	Jul. 22, 2019						_0,	
Sample tested Date:	Jul. 22, 2019 to Aug. 23, 2019							
The tested sample(s) and the	sample inform	nation are p	rovided b	y the client.			16	



























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4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted. FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

























































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5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given

$$E = \frac{\sqrt{30 \times P \times G}}{d} \& S = \frac{E^2}{377}$$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377d^2}$$

Changing to units of mW and cm, using:

$$P(mW) = P(W) / 1000$$
 and

$$d(cm) = d(m) / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$
 Equation 1

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

 $S = Power density in mW / cm^2$







5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

 $S = 0.000199 \times P \times G$

Where P = Power in mW

G = Numeric antenna gain

 $S = Power density in mW / cm^2$

Bluetooth:

٩	Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
b	78	2480	3.981	1.41	20	0.0011	(6,5) 1

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
6	2437	70.795	1.41	20	0.0199	1 (

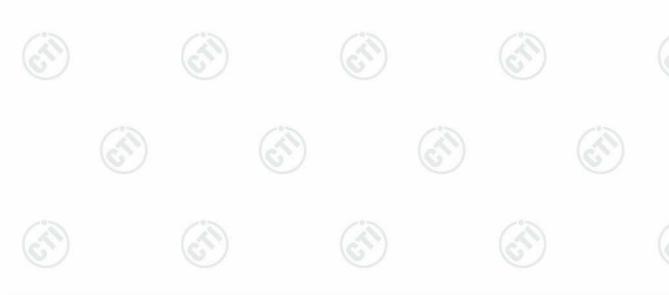
IEEE 802.11g mode:

- 2		<u></u>					
	Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
	1	2412	63.096	1.41	20	0.0177	1

IEEE 802.11n HT20 mode:

	• •					
Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	50.119	1.41	20	0.0141	1

Remark: WLAN and Bluetooth technology can not transmit at same time.











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PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00193801 for EUT external and internal photos.



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