

RF Exposure Evaluation Report

Product : Yanshee
Trade mark : UBTECH
Model/Type reference : Yanshee
Serial Number : N/A
Report Number : EED32K00127804
FCC ID : 2AHJX-YANSHEE
Date of Issue : Jul. 19, 2018
47 CFR Part 1.1307(2015)
Test Standards : 47 CFR Part 1.1310(2015)
KDB447498D01v06
Test result : PASS

Prepared for:

UBTECH ROBOTICS CORP

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2 Version

Version No.	Date	Description
00	Jul. 19, 2018	Original

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4 General Information

4.1 Client Information

Applicant:	UBTECH ROBOTICS CORP
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
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 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
Model No.(EUT):	Yanshee
Trade Mark:	UBTECH
EUT Supports Radios application	BT 4.1 BT Dual mode, 2402MHz to 2480MHz WiFi IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz

4.3 Product Specification subjective to this standard

Frequency Range:	BT 4.1 BT Dual mode, 2402MHz to 2480MHz WiFi IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz	
Firmware version:	Linux 9(manufacturer declare)	
Hardware version:	V1.0(manufacturer declare)	
Antenna Type:	Ceramic antenna	
Antenna Gain:	1.8dBi	
Power Supply:	Adapter	Model: HKA03609640-8A Input: 100-240V~50/60Hz, 1.5A Output: 9.6V---4.0A
	Battery	Rechargeable Li-ion Battery 7.24V, 2750mAh, 19.91Wh
Conducted Peak Output Power:	19.10dBm	
	The Conducted Peak Output Power data refer to the report EED32K00127803.	
Sample Received Date:	May 24, 2018	
Sample tested Date:	May 24, 2018 to Jul. 19, 2018	
The tested sample(s) and the sample information are provided by the client.		

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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 3368 3668 Fax: +86 (0) 755 3368 3385

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.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	* (100)	6
3.0–30	1842/f	4.89/f	* (900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	* (100)	30
1.34–30	824/f	2.19/f	* (180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

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

R= distance to the centre of radiation of the antenna

EIRP = P*G

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user.

Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limit S, then we can conclude the device complies with the rules.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually.

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5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 1.8dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max Conducted Peak Output Power(dBm)	Gain (dBi)	EIRP* (dBm)	EIRP (mW)	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)	Result
Highest	2462	19.10	1.8	20.90	123.03	20	0.024	1.0	Pass

Note: Refer to report No. EED32K00127803 for EUT test Max Conducted Peak Output Power value.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32K00127801 for EUT external and internal photos.

***** End of Report *****

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