CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China
Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.org.cn

Maximum Permissible Exposure Evaluation

FCC ID: PADWF113-A

IC: 10563A-WF113A

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)

EUT Specification

Product Name:	KICKR 2020
Trade Mark:	Wahoo Fitness
Model/Type reference:	WF113
Listed Model(s):	N/A
Frequency band (Operating)	☐BT: 2.402GHz ~ 2.480GHz ☒BLE: 2.402GHz ~ 2.480GHz ☐WLAN: 2.412GHz ~ 2.462GHz ☐RLAN: 5.180GHz ~ 5.240GHz ☐RLAN: 5.745GHz ~ 5.825GHz ☒Others: ANT+ 2457MHz
Device category	☐Portable (<5mm separation) ☐Mobile (>20cm separation) ☒fixed (>20cm separation) ☐Others ___
Exposure classification	☐Occupational/Controlled exposure (S=5mW/cm2) ☒General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒Single antenna ☐Multiple antennas ☐Tx diversity ☐Rx diversity ☐Tx/Rx diversity
Antenna gain (Max)	5.46dBi for 2.4GHz
Evaluation applied	☒MPE Evaluation ☐SAR Evaluation

Maximum Permissible Exposure (MPE) Limits for FCC

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm^2)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: Pd=(Pout*G)\(4*pi*R^2)
Where
Pd= Power density in mW/cm^2
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 the limit of MPE 1mW/cm^2. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Channel frequency (MHz)	Max Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
2402	-3.90	-3.5±1	-2.5	5.46	0.00039	1
2440	-4.20	-4.5±1	-3.5	5.46	0.00031	1
2480	-4.85	-4.5±1	-3.5	5.46	0.00031	1

RF exposure evaluation Limits for IC

RSS-102 Section 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:
• below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
• at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
• at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
• at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\ f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
• at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).
In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Measurement Result

Channel frequency (MHz)	Max Measured Power (dBm)	Tune up tolerance (dBm)	Max Tune up Power (dBm)	Antenna Gain (dBi)	E.I.R.P (mW)	Distance (cm)	Limits (W)
2402	-3.90	-3.5±1	-2.5	5.46	2.96	>20	2.67
2440	-4.20	-4.5±1	-3.5	5.46	1.96	>20	2.67
2480	-4.85	-4.5±1	-3.5	5.46	1.96	>20	2.67

Note

For a more detailed features description, please refer to the RF Test Report.

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