



Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

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RF Exposure Evaluation Report

Report No. : CQASZ20190200034E-02
Applicant: Tinylogics Ltd
Address of Applicant: St John's Innovation Centre, Cowley Road, Cambridge, United Kingdom CB4 0WS, Cambridge, United Kingdom
Manufacturer: Shenzhen Xiao Luo Ji Technology Ltd
Address of Manufacturer: Commercial Office Building 1002, Xi Long Bay Garden (N23 District), 3rd Jia'An Road on Xin'An Street, Bao'An District, Shenzhen
Equipment Under Test (EUT):
Product: FOCI Focus Wearable
Model No.: 1604
Brand Name: FOCI
FCC ID: 2AH3P-M1604
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Test: 2019-02-28 to 2019-03-14
Date of Issue: 2019-03-14
Test Result : **PASS***

Tested By:

(Daisy Qin)

Reviewed By:

(Aaron Ma)

Approved By:

(Jack Ai)



* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190200034E-02	Rev.01	Initial report	2019-03-14

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3 General Information

3.1 Client Information

Applicant:	Tinylogics Ltd
Address of Applicant:	St John's Innovation Centre, Cowley Road, Cambridge, United Kingdom CB4 0WS, Cambridge, United Kingdom
Manufacturer:	Shenzhen Xiao Luo Ji Technology Ltd
Address of Manufacturer:	Commercial Office Building 1002, Xi Long Bay Garden (N23 District), 3rd Jia'An Road on Xin'An Street, Bao'An District, Shenzhen

3.2 General Description of EUT

Product Name:	FOCI Focus Wearable
All Model No.:	1604
Trade Mark:	FOCI
Hardware Version:	V1.0
Software Version:	V1.0
Sample Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Power Supply:	lithium battery:DC3.7V, Charge by USB

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.2
Modulation Type:	GFSK
Number of Channel:	40
Transfer Rate:	1Mbps
Test Software of EUT:	SmartSnippets_Studio_v1.6.3 (manufacturer declare)
Antenna Type:	Integral antenna
Antenna Gain:	4.9dBi

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

1) For BLE

Measurement Data

GFSK(1Mbps) mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-2.9	-2±1	-1	0.794
Middle(2440MHz)	-1.45	-2±1	-1	0.794
Highest(2480MHz)	-0.45	-1±1	0	1.00

Worst case: GFSK(1Mbps)						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-2.9	-2±1	-1	0.794	0.25	3.0
Middle (2440MHz)	-1.45	-2±1	-1	0.794	0.25	
Highest (2480MHz)	-0.45	-1±1	0	1.00	0.31	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190200034E-01