

# Johnson Health Tech. Co., Ltd.

## MPE ASSESSMENT REPORT

**Report Type:**

FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

**Model:**

XUR-C, XIR-02-C, XER-02-C

**REPORT NUMBER:**

201001480SHA-005

**ISSUE DATE:**

June 8, 2022

**DOCUMENT CONTROL NUMBER:**

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Manufacturer: Johnson Health Tech. Co., Ltd.  
No. 999, Sec. 2, Dongda Rd., Daya Dist., Taichung City 428

Factory 1: Johnson Health Tech. Co., Ltd.  
No. 999, Sec. 2, Dongda Rd., Daya Dist., Taichung City 428

Factory 2: Johnson Industries (Shanghai) CO., LTD.  
A1, Export Processing Zone, No. 4500 Bao Qian Rd., Jia Ding,  
Shanghai.

FCC ID: TN7XUR

## SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06  
FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

## PREPARED BY:



Project Engineer  
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## REVIEWED BY:



Reviewer  
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## Revision History

Report No.	Version	Description	Issued Date
201001480SHA-005	Rev. 01	Initial issue of report	June 8, 2022

**TEST REPORT**

## 1 GENERAL INFORMATION

### 1.1 Description of Equipment Under Test (EUT)

Product name:	Fitness equipment console
Type/Model:	XUR-C, XIR-02-C, XER-02-C
Radio Module	AP6398S
Description of EUT:	EUT is a Fitness equipment console, there are three models, all models are the same except the model name, the display size and ratings, we test XUR-C as representative and list the worst results in this report.
Rating:	12Vdc, 4A for XUR-C; 12Vdc, 3A for XIR-02-C; 12Vdc, 3A for XER-02-C.
EUT type:	<input checked="" type="checkbox"/> Table top <input type="checkbox"/> Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	September 4, 2020
Date of test:	September 5, 2020~ September 9, 2020

### 1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11n(HT40)
Operating Frequency:	2412MHz to 2462MHz for IEEE 802.11b/g/n(HT20) 2422MHz to 2452MHz for IEEE 802.11n(HT40)
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT40): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20) 7 Channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna Information:	PCB Antenna, gain is 4.8dBi of antenna 0, gain is 2.9dBi of antenna 1

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	Bluetooth BR+EDR
Operating Frequency:	2402MHz to 2480MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Channel Number:	79 (0 - 78)
Channel Separation:	1 MHz
Antenna:	PCB Antenna, 4.8dBi

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Frequency Band:	2400MHz to 2483.5MHz
Support Standards:	Bluetooth Low Energy
Operating Frequency:	2402MHz to 2480MHz
Type of Modulation:	GFSK
Channel Number:	40
Channel Separation:	2MHz
Antenna Information:	PCB Antenna, 4.8dBi

Frequency Range:	5150 ~ 5250MHz
Support Standards:	802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), 802.11ac(VHT80)
Type of Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Number:	For 5150 ~ 5250MHz band: Channel 36 - 48
Antenna Information:	PCB Antenna, gain is 3.4dBi of both antennas

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**1.3 Description of Test Facility**

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab CAB identifier.: CN0051
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

## 2 MPE Assessment

Test result: Pass

### 2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density $S_{eq}$ (W/m <sup>2</sup> )
0-1 Hz	-	$3,2 \times 10^4$	$4 \times 10^4$	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	$4\ 000/f$	$5\ 000/f$	-
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	-
0,8-3 kHz	$250/f$	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	$0,73/f$	$0,92/f$	-
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is  $\leq 1.0$**

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**2.2 Assessment Results**

Power density (S) is calculated according to the formula:

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm<sup>2</sup>

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 201001480SHA-001, 201001480SHA-002, 201001480SHA-003, 201001480SHA-004:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

The WiFi can support simultaneous transmission.

Mode	Frequency band	Max Power	Antenna Gain	R	S	Limits
	(MHz)	dBm	dBi	(cm)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
WiFi	2400 -2483.5	15.47	4.8	20	0.0212	1
	5150-5250	17.35	3.4	20	0.0237	1
BLE	2400 -2483.5	-12.39	4.8	20	0.00003	1
BR+EDR	2400 -2483.5	-9.47	4.8	20	0.00003	1

Note: 1 mW/cm<sup>2</sup> from 1.310 Table 1

The sum of the MPE ratios for all simultaneously transmitting is

$$0.0212/1+0.0327/1+0.00003/1+0.00007/1=0.046 \leq 1.0$$

For the device can support simultaneous transmission, according to 447498 D01 General RF Exposure Guidance v06,



**Appendix I**

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

\*\*\*\*\* END \*\*\*\*\*