Radio Frequency Exposure Report

On Behalf of

Lifespan Brands LLC
1200 Thorndale Ave, Elk Grove Village, ELK GROVE, Illinois, United States

Product Name:	Bluetooth Connected Body Fat Scale
Model/Type No.:	W191
Trade Name:	WeighRite
FCC ID:	2AHM2-W191
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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	**Lifespan Brands LLC**
Address of applicant:	1200 Thorndale Ave, Elk Grove Village, ELK GROVE, Illinois, United States
Manufacturer:	**Cha's Electronic Industries(Shenzhen)Co., Ltd**
Address of Manufacturer:	Danzhutou Ind. District, Buji, Shenzhen, China

General Description of E.U.T

Items	**Description**
EUT Description:	Bluetooth Connected Body Fat Scale
Model No.:	W191
Supplementary Model No.:	N/A
Trade Name:	WeighRite
Frequency Band:	2402~2480MHz
Channel Spacing:	2 MHz
Number of Channels:	40
Type of Modulation:	GFSK
Antenna Gain	2.5dB
Antenna Type:	PCB Antenna
Rated Voltage:	DC4.5V from battery

Remark:* *The test data gathered are from the production sample provided by the manufacturer.*

1.2 Applicable Standard and Requirement

Requirement is as below:
OET Bulletin 65 Supplement C [June 2001]: Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields

KDB447498 D01 General RF Exposure Guidance v06: RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices

1.3 General Description of Test

Items	Description
EUT Frequency band	☒ FHSS: 2.400GHz ~ 2.483GHz ☐ WLAN: 2.400GHz ~ 2.483GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5825GHz ☐ Others: _____
Device category	☐ Portable (≤50mm separation) ☒ Mobile (>50mm separation) ☐ Others ___
Exposure classification	☐Occupational/Controlled exposure (S = 5mW/cm2) ☒General Population/Uncontrolled exposure (S=1mW/cm^2) ☐Others: _____
Antenna diversity	☒Single antenna ☐Multiple antennas: ☐Tx diversity ☐Rx diversity ☒Tx/Rx diversity
Max. output power	1.12dBm(1.3mW)
Antenna gain (Max)	2.5dBi (Numeric gain:1.58)
Evaluation applied	☒MPE Evaluation ☐SAR Evaluation

Note:

1. The maximum output power is 1.12dBm at IEEE 802.11g mode 2437MHz (with 1.58 numeric antenna gain.)

2. For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20 cm, even if the calculations indicate that the MPE distance would be lesser.

4.3. General SAR test exclusion guidance

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 Test Exclusion Threshold* condition(s), listed below, is (are) satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum *test separation distance* required for the exposure conditions.[28] The minimum *test separation distance* defined in 4.1 f) is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. To qualify for SAR test exclusion, the *test separation distances* applied must be fully explained and justified, typically in the SAR measurement or SAR analysis report, by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, according to the required *published RF exposure KDB procedures*. When no other RF exposure testing or reporting are required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for SAR test exclusion. When required, the device specific conditions described in the other *published RF exposure KDB procedures* must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops and tablets, etc.[29]

a) For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following:

   [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,[30] where

   - $f_{(GHz)}$ is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation[31]
   - The result is rounded to one decimal place for comparison
   - The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

   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 according to 4.1 f) is applied to determine SAR test exclusion.

b) For 100 MHz to 6 GHz and *test separation distances* > 50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following (also illustrated in Appendix B):[32]

   1) {[Power allowed at *numeric threshold* for 50 mm in step a)] + [(test separation distance – 50 mm)·($f_{(MHz)}$/150)]} mW, for 100 MHz to 1500 MHz
   2) {[Power allowed at *numeric threshold* for 50 mm in step a)] + [(test separation distance – 50 mm)· 10]} mW, for > 1500 MHz and ≤ 6 GHz

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):[33]

   1) For *test separation distances* > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/$f_{(MHz)}$)]
   2) For *test separation distances* ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½
   3) SAR measurement procedures are not established below 100 MHz.

When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any SAR test results below 100 MHz to be acceptable.[34]

1.3 SAR Test Exclusion Thresholds

Appendix A

***SAR Test Exclusion Thresholds* for 100 MHz – 6 GHz and ≤ 50 mm**

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

MHz	30	35	40	45	50	mm
150	232	271	310	349	387	*SAR Test Exclusion Threshold* (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g *SAR Test Exclusion Thresholds* indicated above. These thresholds do not apply, by extrapolation or other means, to occupational exposure limits.

1.4 RF Exposure Evaluation

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[P_{max}(mW)/d_{min}(mm)*\sqrt{f(GHz)}] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

1) f(GHz) is the RF channel transmit frequency in GHz
2) Power and distance are rounded to the nearest mW and mm before calculation

3) The result is rounded to one decimal place for comparison
4) The values 3.0 and 7.5 are referred to as numeric thresholds in step b)

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 according to 4.1 f) is applied to determine SAR test exclusion.

EUT parameter (data from the separate report)	
Given [P_{max}(mW)/d_{min}(mm)*$\sqrt{f(GHz)}$]	Where f: the RF channel transmit frequency in GHz P_{max}: Transmitted power in watt; d_{min}: minimum distance from the transmitting antenna in mm
P_{max}	1.12dBm(0.0013W)
d_{min}	50mm
f	2.4GHz
Yields: [P_{max}(mW)/d_{min}(mm)*$\sqrt{f(GHz)}$]=(1.3/50)*1.549=0.04<3.0	

1.5 Conclusion

The measurement results comply with the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB447498 D01 General RF Exposure Guidance v06.