TEST REPORT

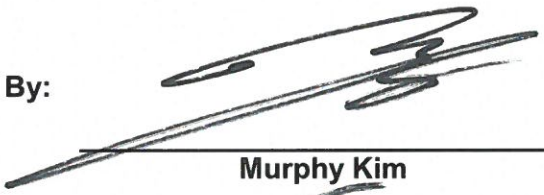
of

FCC CFR 47 part 1, 1.1307(b), 1.1310

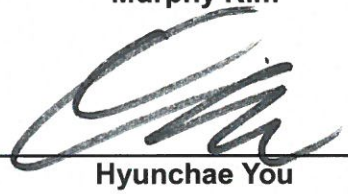
FCC ID: 2ASCLRD200P

Equipment Under Test	:	Continuous Radon Monitor
Model Name	:	RD200P
Variant Model Name	:	RD200P2
Applicant	:	FTLAB co., LTD.
Manufacturer	:	FTLAB co., LTD.
Date of Receipt	:	2018.09.17
Date of Test(s)	:	2018.12.04 ~ 2019.02.19
Date of Issue	:	2019.02.20

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

Tested By:  **Date:** **2019.02.20**

Murphy Kim

Technical Manager:  **Date:** **2019.02.20**

Hyunchae You

INDEX

Table of Contents Page

1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx.

Phone No. : +82 31 688 0901
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1.2. Details of Applicant

Applicant : FTLAB co., LTD.
Address : (Jungwoo venture town 1), -503, 8, Haebong-ro330beon-gil, Sin-gil-dong, Danwon-gu, Ansan-si, Gyeonggi-do, South Korea
Contact Person : Yu, Yong-soon
Phone No. : +82 70 4906 4702

1.3. Details of Manufacturer

Company : Same as applicant
Address : Same as applicant

1.4. Description of EUT

Kind of Product	Continuous Radon Monitor
Model Name	RD200P
Variant Model Name	RD200P2
Power Supply	DC 12 V
Frequency Range	2 402 ㎒ ~ 2 480 ㎒ (Bluetooth Low Energy), 2 412 ㎒ ~ 2 462 ㎒ (11b/g/n_HT20)
Modulation Technique	GFSK, π/4DQPSK, 8DPSK
Number of Channels	11 channels (11b/g/n_HT20), 40 channels (Bluetooth Low Energy)
Antenna Type	Internal type
Antenna Gain	2 402 ㎒ ~ 2 480 ㎒ (Bluetooth Low Energy): 1.30 ㏈i, 2 412 ㎒ ~ 2 462 ㎒ (11b/g/n_HT20): 3.77 ㏈i

1.5. Declaration by the Manufacturer

- WiFi, Bluetooth Low Energy can transmit simultaneously.

1.6. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL013530	2019.02.20	Initial

1.7. Information of Variant Models

Model Name		Description
Basic model	RD200P	- Basic Model
Variant model	RD200P2	- Same to basic model, but it will be used for marketing purpose.

2. RF Exposure Evaluation

2.1. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (㎒)	Electric Field Strength(V/m)	Magnetic Field Strength (A/m)	Power Density (㎽/㎠)	Average Time
(A) Limits for Occupational/Controlled Exposure				
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
300-1 500	-	-	f/300	6
1 500-100 000	-	-	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
300-1 500	-	-	**f/1500**	**30**
1 500-100 000	-	-	**1.0**	**30**

2.1.1. Friis transmission formula: Pd = (Pout*G)/(4*pi*R^2)

Where Pd = power density in ㎽/㎠

Pout = output power to antenna in ㎽

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in ㎝

Pd the limit of MPE, 1 ㎽/㎠. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2.1.2. Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data
Test Mode : Normal Operation

2.1.3. Output Power into Antenna & RF Exposure Evaluation Distance

Bluetooth Low Energy
- Maximum tune up tolerance

Frequency Range (㎒)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 ㎝ (㎽/㎠)	Limits (㎽/㎠)
2 402 ~ 2 480	-8	1.30	0.000 043	1

WLAN
- Maximum tune up tolerance

Frequency (㎒)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 ㎝ (㎽/㎠)	Limits (㎽/㎠)
2 412 ~ 2 462	9	3.77	0.003 765	1

Note;

- The power density Pd (5th column) at a distance of 20 ㎝ calculated from the friis transmission formula is far below the limit of 1 ㎽/㎠.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum 20 ㎝ between the radiator and your body.
- The antenna gain of this transmitter is less than 6 dBi and must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.

Simultaneous transmission of MPE test exclusion.

Bluetooth Low Energy: the ratio is 0.000 043 / 1.00
WLAN (2.4G): the ratio is 0.003 765 /1.00

Confirm the sum result of individual MPEs ratio is ≤ 1.00;
Bluetooth Low Energy + WLAN (2.4G): (0.000 043 / 1.00) + (0.003 765 / 1.00) = 0.003 808 ≤ 1.00

So this device meets the KDB 447498 D01 v06 section 7.2 requirement of “Simultaneous transmission MPE test exclusion”

- End of the Test Report -