TEST REPORT

of

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

FCC ID: YZP-RBHAT223A

Equipment Under Test	:	Wi-Fi + BT Combo module
Model Name	:	RBHA-T223A
Applicant	:	LG INNOTEK CO., LTD.
Manufacturer	:	LG INNOTEK CO., LTD.
Date of Test(s)	:	2015.10.08 ~ 2015.11.24
Date of Issue	:	2015.11.30

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

Tested By: **Jinhyoung Cho** **Date:** **2015.11.30**

Approved By: **Denny Ham** **Date:** **2015.11.30**

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

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.

Telephone : +82 31 688 0901
FAX : +82 31 688 0921

1.2. Details of applicant

Applicant : LG INNOTEK CO., LTD.
Address : 26, Hanamsandan 5beon-ro, Gwangsan-gu, Gwangju, 62229, Korea
Contact Person : Jeong, In-Chang
Phone No. : +82 10 2326 9972

1.3. Description of EUT

Kind of Product	Wi-Fi + BT Combo module
Model Name	RBHA-T223A
Power Supply	DC 3.3 V
Frequency Range	2 402 ㎒ ~ 2 480 ㎒ (Bluetooth, Bluetooth Low Energy), 2 412 ㎒ ~ 2 462 ㎒ (11b/g/n_HT20), 2 422 ㎒ ~ 2 452 ㎒ (11n_HT40)
Modulation Technique	DSSS, OFDM, GFSK, π/4DQPSK, 8DPSK
Number of Channels	79 channel (Bluetooth), 40 channel (Bluetooth Low Energy), 11 channel (11b/g/n_HT20), 7 cahnnel (11n_HT40)
Operation Temperature	-40 ℃ ~ 85 ℃
Antenna Type	Dipole Antenna
Antenna Gain	1.82 ㏈i

1.4. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL009285	2015.11.25	Initial
1	F690501/RF-RTL009285-1	2015.11.30	Modified applicant address

1.5. Declaration by the manufacturer

- WLAN & BT do not transmit simultaneously.

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

BT

- Maximum tune up tolerance

Operating Frequency Range (㎒)	Maximum Average Output Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 ㎝ (㎽/㎠)	Limits (㎽/㎠)
2 402 ~ 2 480	4	1.82	0.000 760	1

BT LE

- Maximum tune up tolerance

Operating Frequency Range (㎒)	Maximum Average Output Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 ㎝ (㎽/㎠)	Limits (㎽/㎠)
2 402 ~ 2 480	11	1.82	0.003 808	1

WLAN (2.4G)

- Maximum tune up tolerance

Operating Frequency Range (㎒)	Maximum Average Output Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 ㎝ (㎽/㎠)	Limits (㎽/㎠)
2 412 ~ 2 462	19	1.82	0.024 029	1

Note :
1. The power density Pd (5th column) at a distance of 20 ㎝ calculated from the friis transmission formula is far below the limit of 1 ㎽/㎠.