TEST REPORT

of

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

FCC ID: 2ABMZ-BR-PT-PTF-100

Equipment Under Test	:	PETRONE
Model Name	:	BR-PT-100
Variant Models	:	BR-PT-PTD-100
Applicant	:	BYROBOT Co., Ltd.
Manufacturer	:	BYROBOT Co., Ltd.
Date of Test(s)	:	2016.04.01 ~ 2016.04.16
Date of Issue	:	2016.06.15

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

Tested By: **Jinhyoung Cho** **Date:** **2016.06.15**

Approved By: **Hyunchae You** **Date:** **2016.06.15**

INDEX

Table of Contents Page

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 : BYROBOT Co., Ltd.
Address : #417, Human Sky Valley, 33, Omokcheon-ro 132beon-gil, Gweonseon-gu, Suwon-si, Gyeonggi-do, South Korea
Contact Person : Hong, James
Phone No. : +82 31 227 9675

1.3. Description of EUT

Kind of Product	PETRONE
Model Name	BR-PT-100
Variant Models	BR-PT-PTD-100
Power Supply	DC 3.7 V
Frequency Range	2 402 ㎒ ~ 2 480 ㎒ (Bluetooth Low Energy)
Modulation Technique	GFSK
Number of Channels	40 channels (Bluetooth Low Energy)
Antenna Type	PCB Antenna
Antenna Gain	5.3 ㏈i

1.4. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL009751	2016.04.26	Initial
1	F690501/RF-RTL009751-1	2016.06.08	Separated FCC ID for Bluetooth Low Energy and WLAN
2	F690501/RF-RTL009751-2	2016.06.15	Modified Bluetooth Low Energy Maximum Average Output Power

1.5. Information of Variant Models

	Model Name	Information
Basic	BR-PT-100	Drone mounted propellers
Variant	BR-PT-PTD-100	-Same to basic model, but it is different below; Drone mounted wheels

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

Operating Frequency Range (㎒)	Maximum Average Output Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 ㎝ (㎽/㎠)	Limits (㎽/㎠)
2 402 ~ 2 480	-12	5.3	0.000 043	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 ㎽/㎠.