Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

Report Template Version: V03
Report Template Revision Date: Mar.1st, 2017

RF Exposure Evaluation Report

Report No. :	CQASZ20180800079E-02
Applicant:	BRANDCHARGER LTD
Address of Applicant:	7/F, UNIT H, MAI LUEN INDUSTRIAL BUILDING, 23 KUNG YIP STREET, KWAI HING, Hong Kong
Manufacturer:	Shenzhen HOOX Technology Co.,Ltd
Address of Manufacturer:	3A, Bldg 1, DAERXUN Technology Industrial Park, ShangMuGu Community, PingHu St, LongGang Dist, Shenzhen, China
Equipment Under Test (EUT):	
Product:	LYNQ
Model No.:	LYNQ
Brand Name:	N/A
FCC ID:	2AG5A-LYNQ
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-08-20 to 2018-08-30
Date of Issue:	2018-08-30
Test Result :	**PASS***

Tested By: Tiny You

(Tiny You)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

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

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20180800079E-02	Rev.01	Initial report	2018-08-30

2 Contents

3 General Information

3.1 Client Information

Applicant:	BRANDCHARGER LTD
Address of Applicant:	Flat H, 7/F, Mai Luen Industrial Building 23 Kung Yip Street Kwai Chung Hong Kong
Manufacturer:	Shenzhen HOOX Technology Co.,Ltd
Address of Manufacturer:	3A, Bldg 1, DAERXUN Technology Industrial Park, ShangMuGu Community, PingHu St, LongGang Dist, Shenzhen, China

3.2 General Description of EUT

Product Name:	LYNQ
Model No.:	LYNQ
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Sample Type:	☒ Mobile ☐ Portable ☐ Fix Location
Power Supply:	Adapter: Model: yczx-60W1268 Input: 100-240V AC 0.27-0.6A 50/60Hz Output: DC12V 5A

3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Test Software of EUT:	RTLBTAPP (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	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
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4* Pi * R^2)$

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd id the limit of MPE, 1 mW/cm2 . 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 r where the MPE limit is reached.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.2 1.1.3 EUT RF Exposure Evaluation

1) For BT

Antenna Gain: 0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest(2402MHz)	2.650
Middle(2441MHz)	5.240
Highest(2480MHz)	5.570
π/4DQPSK mode	
Test channel	Peak Output Power (dBm)
Lowest(2402MHz)	0.380
Middle(2441MHz)	3.590
Highest(2480MHz)	3.680
8DPSK mode	
Test channel	Peak Output Power (dBm)
Lowest(2402MHz)	0.890
Middle(2441MHz)	4.030
Highest(2480MHz)	4.090

GFSK mode(worst case)

Channel	Frequency (MHz)	Max Conducted average Output Power (dBm)	Output Power to Antenna (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm^2)	Limit	Result
Highest	2480	5.570	3.606	0	0.00072	1.0	PASS

Note: 1) Refer to report No. CQASZ20180800079E-01 for EUT test Max Conducted Peak Output Power value.

2) $Pd = (Pout*G)/(4* Pi * R^2)=(3.606*1.0)/(4*3.1416*20^2)=0.00072$