RF Exposure Evaluation declaration

Product Name : Qrio Smart Lock

Model No.   : Q-SL1

FCC ID   : 2AJJZ-000001

Applicant : Qrio, Inc.

Address   : Toshin Sangyo Bld.3F,2-3-4 Ebisunishi,Shibuya-ku Tokyo,

150-0021,Japan

Date of Receipt   :   Sep. 05, 2016

Date of Declaration :   Sep. 26, 2016

Report No.   :   1690120R-RFUSP23V00-1

Issued Date: Sep. 26, 2016
Report No.: 1690120R-RFUSP23V00-1

Product Name	Qrio Smart Lock
Applicant	Qrio, Inc.
Address	Toshin Sangyo Bld.3F,2-3-4 Ebisunishi,Shibuya-ku Tokyo, 150-0021,Japan
Manufacturer	Qrio, Inc.
Model No.	Q-SL1
FCC ID.	2AJJZ-000001
EUT Rated Voltage	DC 6V (Power by Battery)
EUT Test Voltage	DC 6V (Power by Battery)
Trade Name	Qrio
Applicable Standard	FCC 47 CFR 1.1310
Test Result	Complied

Documented By　　　:

(Senior Adm. Specialist / Genie Chang)

Tested By　　　　　:
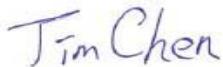
(Engineer / Tim Chen)

Approved By　　　　:

(Director / Vincent Lin)

1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: 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 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

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

Where

Pd = power density in mW/cm^2

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/cm^2 . 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.

1.2. Test Procedure

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

The temperature and related humidity: 18℃ and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product   :   Qrio Smart Lock
Test Item   :   RF Exposure Evaluation

Operation Frequency	2402 – 2480MHz
Maximum Conducted output power	-12.08 dBm
Antenna gain	-1.5 dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
0.061944108	0.000009

Power density is lower than the limit (1 mW/cm2).