



RF Exposure Evaluation Declaration

Product Name : Ring Bridge
Model No. : 5B01S8
FCC ID : 2AEUPBHARB001

Applicant : Ring, LLC.

Address : 1523 26th St, Santa Monica, CA 90404

Date of Receipt : Dec. 21, 2018

Test Date : Dec. 21, 2018 ~ Dec. 26, 2018

Issued Date : Jan. 03, 2019

Report No. : 18C2098R-RF-US-P20V01

Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, A2LA or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.

Test Report Certification

Issued Date : Jan. 03, 2019

Report No. : 18C2098R-RF-US-P20V01



Product Name : Ring Bridge
Applicant : Ring, LLC.
Address : 1523 26th St, Santa Monica, CA 90404
Manufacturer : Ring, LLC.
Address : 1523 26th St, Santa Monica, CA 90404
Model No. : 5B01S8
FCC ID : 2AEUPBHARB001
EUT Voltage : DC 5V
Test Voltage : AC 120V/60Hz
Applicable Standard : KDB 447498D01V06
FCC Part1.1310
Test Result : Complied
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,
215006, Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Designation Number: CN1199

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Approved By : Jack Zhang
(Engineer Supervisor: Jack Zhang)

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: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is 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.

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	:	Ring Bridge
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

● **Antenna Information:**

LoRa:

Model No.	N/A							
Antenna manufacturer	N/A							
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/>	2*TX+2*RX	<input type="checkbox"/>	3*TX+3*RX	<input type="checkbox"/>	4*TX+4*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO						
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	Basic				
			<input type="checkbox"/>	CDD				
			<input type="checkbox"/>	Sectorized				
			<input type="checkbox"/>	Beam-forming				
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/>	Dipole				
			<input type="checkbox"/>	Sectorized				
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/>	PIFA				
			<input checked="" type="checkbox"/>	PCB				
			<input type="checkbox"/>	Ceramic Chip Antenna				
			<input type="checkbox"/>	Metal plate type F antenna				
Antenna Gain	-1dBi							

WIFI(2.4G):

Model No.	N/A							
Antenna manufacturer	N/A							
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/>	2*TX+2*RX	<input type="checkbox"/>	3*TX+3*RX	<input type="checkbox"/>	4*TX+4*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO						
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	Basic				
			<input type="checkbox"/>	CDD				
			<input type="checkbox"/>	Sectorized				
			<input type="checkbox"/>	Beam-forming				
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/>	Dipole				
			<input type="checkbox"/>	Sectorized				
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/>	PIFA				
			<input type="checkbox"/>	PCB				
			<input type="checkbox"/>	Ceramic Chip Antenna				
			<input checked="" type="checkbox"/>	Metal plate type F antenna				
	Antenna Gain	1.8dBi						

- **Power Density:**

Standalone modes:

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Power Density Limit at R = 20 cm (mW/cm ²)
LoRa	902 ~ 928	18.26	-1	0.011	1.0
WIFI(2.4G)	2412 ~ 2462	13.55	1.8	0.007	1.0

Simultaneous transmission:

Test Mode	Frequency Band (MHz)	EIRP(dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit of Power Density S(mW/cm ²)
LoRa	902 ~ 928	17.26	0.011	1.0
WIFI(2.4G)	2412 ~ 2462	15.35	0.007	1.0
Simultaneous transmission power density			0.018	1.0

Note: The simultaneous transmission power density is 0.018mW/cm² for Ring Bridge without any other radio equipment.

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