



# RF Exposure Evaluation Declaration

Product Name : Ring Bridge  
Model No. : 5B01S8  
HVIN : 5B01S8  
FVIN : 0.7.5-33  
FCC ID : 2AEUPBHARB001

Applicant : Ring, LLC.

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

Date of Receipt : Feb. 02, 2020

Issued Date : Apr. 07, 2020

Report No. : 2080843R-RF-US-P20V01

Report Version : V1.0

The test results presented in this report relate only to the object tested.

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result, unless the specification, standard or customer have special requirements

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# Test Report Certification

Issued Date : Apr. 07, 2020

Report No. : 2080843R-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  
HVIN : 5B01S8  
FVIN : 0.7.5-33  
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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(Technical Supervisor: Frank He)

Approved By : Jack Zhang  
(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 <sup>2</sup> )	Average Time (Minutes)
<b>(A) Limits for Occupational/ Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
<b>(B) Limits for General Population/ Uncontrolled Exposures</b>				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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°C 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/FSK:

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:**

**Standlone modes:**

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Power Density Limit at R = 20 cm (mW/cm <sup>2</sup> )
LoRa FHSS 250KHz: 902.3~926.7MHz, 400KHz	902 ~ 928	17.96	-1	0.00988	0.6
LoRa FHSS 125KHz: 902.2~927.8MHz, 200KHz	902 ~ 928	17.86	-1	0.00965	0.6
LoRa FHSS 125KHz: 902.3~914.9MHz, 200KHz	902 ~ 928	17.89	-1	0.00972	0.6
FSK FHSS 5Kbps: 902.2~927.8MHz, 200KHz	902 ~ 928	18.21	-1	0.01046	0.6
FSK FHSS 50Kbps: 902.2~927.8MHz, 200KHz	902 ~ 928	17.89	-1	0.00972	0.6
FSK FHSS 150Kbps: 902.4~927.6MHz, 400KHz	902 ~ 928	18.05	-1	0.01009	0.6
FSK FHSS 250Kbps: 902.5~927.5MHz, 500KHz	902 ~ 928	17.92	-1	0.00979	0.6
LoRa DTS 500KHz	902 ~ 928	18.26	-1	0.011	0.6
WIFI(2.4G)	2412 ~ 2462	13.55	1.8	0.00682	1

**Simultaneous transmission mode:**

Wireless Configure	Maximum EIRP (dBm)	Limit of Power Density S(mW/cm <sup>2</sup> )	Power Density S at R = 20 cm (mW/cm <sup>2</sup> )	Rate	Limit
LoRa	17.26	0.6	0.011	0.0251	1
WIFI(2.4G)	15.35	1	0.00682		

Note: Rate<1.0, Simultaneous transmission mode compliant

————— The End —————