



## RF Exposure Evaluation Declaration

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**FCC ID:** 2AQV6RABBIT

**APPLICANT:** Suzhou Pairlink Network Technology Ltd.

**Address:** Room 117, No.55, Su hong xi Road, Suzhou Industrial Park, Suzhou City, Jiangsu Province, China.

**Application Type:** Certification

**Product:** Rabbit Bluetooth 5 BLE module

**Model No.:** Rabbit-B, Rabbit-C

**Brand Name:** Pairlink

**FCC Rule Part(s):** FCC Part 2 (Section 2.1091)

**Reviewed By:**

*Sunny Sun*

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Sunny Sun

**Approved By:**

*Robin Wu*

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Robin Wu



The test results relate only to the samples tested.

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

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### Revision History

Report No.	Version	Description	Issue Date	Note
2107RSU041-U2	Rev. 01	Initial Report	08-25-2021	Valid

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#### 1.4. Product Information

Product Name	Rabbit Bluetooth 5 BLE module
Model No.	Rabbit-B, Rabbit-C
Brand Name	Pairlink
Hardware Version	V2
Software Version	V1
Bluetooth Specification	v5.0 single mode, BLE only
Operating Temperature	-40 ~ 85°C
Power Type	DC 1.8V ~ 3.6V
Remarks:	
	1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.
	2. The only difference between Rabbit-B and Rabbit-C is different antenna type.

#### 1.5. RF Specification

Frequency Range	2402~2480MHz
Channel Number	40
Type of Modulation	GFSK
Data Rate	1Mbps & 2Mbps
Antenna Type	For Rabbit-B: PCB Antenna For Rabbit-C: Dipole Antenna
Antenna Gain	For Rabbit-B: -0.41 dBi For Rabbit-C: 0.30 dBi

#### 1.6. Applied Standards

KDB 447498 D01v06

## 2. RF Exposure Evaluation

### 2.1. Test Limit

#### SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and $\leq 50$ mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	
MHz	30	35	40	45	50	
150	232	271	310	349	387	SAR Test Exclusion Threshold (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

## 2.2. Test Result

Product	Rabbit Bluetooth 5 BLE module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Tune Up Power (dBm)	Output Power (mW)	SAR Test Exclusion Threshold (mW) @ 5mm
Bluetooth-LE	2402 ~ 2480	7.23	8	6.31	10

Note: Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Dist (mm)}} * \sqrt{\text{Frequency(GHz)}} \leq 3.0$$

Based on the maximum conducted power of Bluetooth and the antenna to use separation distance, Bluetooth SAR was not required;

For Bluetooth-LE,  $(6.31 / 5) * \sqrt{2.402} = 1.96 < 3.00$

So SAR test exclusion can be applied for Rabbit Bluetooth 5 BLE module.



## Appendix - EUT Photograph

Refer to "2107RSU041-UE" file.