

RF EXPOSURE REPORT



FCC Applicant: BIONIME CORPORATION
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Taiwan(R.O.C)

Product Name: RIGHTEST Continuous Glucose Monitoring System_ Receiver

Brand Name: Rightest

Model No.: Receiver(HR320)

Model Difference: N/A

Report Number: ES/2021/C0010

FCC ID ADU-HR320

Issue Date: Jan. 26, 2022

Date of EUT Received: Dec. 06, 2021

Approved By

John Teh

John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1093.

The results of this report relate only to the sample identified in this report.

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Revision History					
Report Number	Revision	Description	Issue Date	Revised By	Remark
ES/2021/C0010	Rev.00	Initial creation of document	Dec. 24, 2021	Kimmy Chiou	*
ES/2021/C0010	Rev.01	Modify comment	Jan. 13, 2022	Kimmy Chiou	*
ES/2021/C0010	Rev.02	Modify comment	Jan. 26, 2022	Kimmy Chiou	

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.
- 2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	RIGHTEST Continuous Glucose Monitoring System_ Receiver
Brand Name:	Rightest
Model No.:	Receiver(HR320)
Model Difference:	N/A
Power Supply:	3.7Vdc

Note: Device with two different panel IC, the worst case Panel B for NFC, Panel A for BLE was reported in this test report.

1.2 Reference Test Report

Test Lab:	SGS Taiwan Ltd. Central RF Lab
Report Number:	ER/2021/C0025, ER/2021/C0026

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2 RF EXPOSURE EVALUATION FOR PORTABLE CONDITIONS

2.1 FCC Standard Applicable:

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

2.1.1 As per KDB 447498 D01 4.3.1,

Step a: For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

- $f(\text{GHz})$ 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
- The values 3.0 and 7.5 are referred to as numeric thresholds in **step b)** below

Step b: For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

- 1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

Step c: For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz

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2.2 Measurement Result:

Step a:

This is a portable device and the max. output power including tune-up tolerance is 1.225 (mW), lower than the threshold given and derived as formula given above, where

$$=1.225(\text{mW})/5(\text{mm})*\sqrt{2.48(\text{GHz})} = 0.386 < 3.0$$

Frequency (MHz)	Max. output power including tune-up tolerance(d Bm)	Max. output power including tune-up tolerance(m W)	Distance (mm)	Result	≤ 3.0 for 1-g SAR
2480	0.88	1.225	5	0.386	TRUE

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.

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2.2.1 As per KDB447498D01v06 4.3.1 c)

SAR test exclusion threshold for NFC (13.56MHz) shall be evaluated as below,

- a) For *test separation distances* ≤ 50 mm, the power threshold determined by the equation in 4.3.1 c)
 - 1) for 50 mm and 100 MHz is multiplied by ½
 - b) The power threshold at 50mm/100 MHz in 4.3.1 b) is multiplied by [1 + log(100/f(MHz))] where f is 13.56MHz
 - c) The power threshold in 4.3.1 b) is [Power allowed at numeric threshold for 50 mm in 4.3.1 a) + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz where test separation distance is 50mm, frequency is 100MHz.
 - d) Power allowed at numeric threshold for 50 mm in 4.3.1 a) is $[3/\sqrt{f(\text{GHz})}] \cdot (\text{test separation distance})$
- Hence, SAR test exclusion threshold is calculated in reverse sequence:
- d) : $[3/\sqrt{0.1}] \cdot 50 = 474.3416\text{mW}$
 - c) : $474.3416 + (50-50) \cdot (100/150) = 474.3416\text{mW}$
 - b) : $474.3416 \cdot [1+\log(100/13.56)] = 885.9470\text{mW}$
 - a) : $885.9470 \cdot 0.5 = 442.974\text{mW}$

Step c:

Frequency (MHz)	E-FIELD dBuV/m	Test Distance (m)	EIRP (dBm)	EIRP (mW)	EIRP/Threshold
13.56	12.54	30	-62.61757	0.0000005	0.00000001

Note:

$$\text{EIRP (dBm)} = (\text{E-FIELD(dBuV/m)} + 20\log(d(m)) - 104.7)$$

$$\text{EIRP(mW)} = (10^{(\text{EIRP(dBm)}/10)})$$

2.2.2 Simultaneous Transmission

Operation Mode	Result / Threshold	Σ (Power Density / Limit)
13.56 MHz	0.000000001	0.132000001
2480 MHz	0.132	

Note:

1. $\Sigma(\text{Result / Threshold})$: This is a summation of [(Power Density for each transmitter/antenna included in the simultaneous transmission) / (corresponding MPE limit)].
2. Considering the collocated transmitters, the aggregated (Result / Threshold) is smaller than 1, and MPE of collocated transmitters is compliant

~ End of Report ~

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