



## RF Exposure Evaluation Declaration

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**FCC ID:** Z9G-EDF141

**Applicant:** Edifier International Limited

**Application Type:** Certification

**Product:** Gaming speakers

**Model No.:** G1000

**Brand Name:** EDIFIER, HECATE

**FCC Classification:** FCC Part 15 Spread Spectrum Transmitter (DSS)

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

**Reviewed By:**

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**Approved By:**

*Robin Wu*

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.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Shenzhen) Co., Ltd.

### Revision History

Report No.	Version	Description	Issue Date	Note
2103RSU083-U2	Rev. 01	Initial Report	04-12-2021	Valid

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## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	Gaming speakers
Model No.	G1000
Operating Temp.	0 ~ 45°C
Input	5Vdc, 1A
Bluetooth Version	v5.1 single mode, BR/EDR only

### 1.2. Radio Specification

Operating Frequency	2402~2480MHz
Channel Number	79
Type of modulation	GFSK, Pi/4 DQPSK
Data Rate	1Mbps (GFSK), 2Mbps (Pi/4 DQPSK)
Antenna Type	PCB Antenna
Antenna Gain	2.59dBi

Note: All above information was declared by manufacturer.

### 1.3. Applied Standards

KDB 447498 D01v06

## 2. RF Exposure Evaluation

### 2.1. Limits

#### 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	mm
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:

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

- f(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 of RF Exposure Evaluation

Product	Gaming speakers
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Output Power		SAR Test Exclusion Threshold (mW)
		(dBm)	(mW)	
Bluetooth	2402 ~ 2480	-2.61	0.55	10

Note 1: 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;

$$\left(\frac{0.55\text{mW}}{5}\right) * \sqrt{2.402} = 0.17 < 3.00$$

Note 2: When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

## **Appendix - EUT Photograph**

Refer to "2103RSU083-UE" file.