RF Exposure Evaluation Declaration

FCC ID:	Z9G-EDF118
Applicant:	Edifier International Limited
Application Type:	Certification
Product:	Bluetooth Stereo Headphones
Model No.:	EDF200040
Brand Name:	EDIFIER
FCC Classification:	Digital Transmission System (DTS) FCC Part 15 Spread Spectrum Transmitter (DSS)
FCC Rule Part(s):	FCC Part 2 (Section 2.1091)

Reviewed By: (Jame Yuan)

Approved By: (Robin Wu)

Revision History

Report No.	Version	Description	Issue Date	Note
2011RSU058-U3	Rev. 01	Initial Report	12-02-2020	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Bluetooth Stereo Headphones
Model No.	EDF200040
Test Device Label No.	20201123Sample#03 (Conducted Sample) 20201123Sample#02 (Radiated Sample)
Operating Temp.	0 ~ 45°C
Rated Input	5VDC, 1A
Bluetooth Version	v5.1 dual mode
Accessories	
Li-ion Battery	Model No.: CEL503245, 503245 Capacitance: 3.7V 670mAh 2.479Wh Limited Charging Voltage: 4.2V

1.2. Product Specification

Frequency Range	2402~2480MHz
Number of Channels	For Bluetooth: 79 For BT-LE: 40
Channel Spacing	For Bluetooth: 1MHz For BT-LE: 2MHz
Modulation	For Bluetooth:1Mbps (GFSK), 2Mbps (Pi/4 DQPSK), 3Mbps (8DPSK) For BT-LE: GFSK
Data Rate	Up to 2Mbps
Antenna Type	PCB Antenna
Antenna Gain	2.2dBi

1.3. Applied Standards

KDB 447498 D01v06

2. RF Exposure Evaluation

2.1. Limits

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 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 ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] * [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 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 ≤ 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	Bluetooth Stereo Headphones
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Turn-up Output Power		SAR Test Exclusion Threshold (mW)
		(dBm)	(mW)	
Bluetooth-EDR	2402 ~ 2480	4.00	2.51	10
Bluetooth-LE	2402 ~ 2480	9.00	7.94	10

Note 1: Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances<50mm is defined by the following equation:

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

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

For Bluetooth-EDR, $(\frac{2.51mW}{5}) * \sqrt{2.402} = 0.778 < 3.00$

For Bluetooth-LE, $(\frac{7.94mW}{5}) * \sqrt{2.402} = 2.461 < 3.00$

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

The End

Appendix - EUT Photograph

Refer to “2011RSU058-UE” file.