

RF Exposure Evaluation Report

Product : FM/AM/SW Radio with Wireless speaker & Alarm Clock
Trade mark : N/A
Model/Type reference : RAD-T259X
Serial Number : N/A
Report Number : EED32S811697
FCC ID : 2BT3X-RAD-T259X
Date of Issue : Jun. 22, 2026
Test Standards : 47 CFR Part 2.1093
KDB 447498 D01 General RF Exposure Guidance v06
Test result : PASS

Prepared for:

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2 General Information

2.1 Client Information

Applicant:	Dongguan Zhihe Technology Co., Ltd.
Address of Applicant:	Room 201, Building 1, No. 16, Section of Guanzhang Road, Zhangmutou Town, Dongguan City, Guangdong Province, P.R. China
Manufacturer:	Dongguan Zhihe Technology Co., Ltd.
Address of Manufacturer:	Room 201, Building 1, No. 16, Section of Guanzhang Road, Zhangmutou Town, Dongguan City, Guangdong Province, P.R. China
Factory:	Dongguan Zhihe Technology Co., Ltd.
Address of Factory:	Room 201, Building 1, No. 16, Section of Guanzhang Road, Zhangmutou Town, Dongguan City, Guangdong Province, P.R. China

2.2 General Description of EUT

Product Name:	FM/AM/SW Radio with Wireless speaker & Alarm Clock
Model No.:	RAD-T259X
Test Model No.:	RAD-T259X
Trade Mark:	N/A

2.3 Product Specification subjective to this standard

Frequency Range:	BLE/BT: 2402MHz~2480MHz	
Modulation Type:	BLE: GFSK BT: GFSK, $\pi/4$ DQPSK, 8DPSK	
Test Power Grade:	Default	
Test Software of EUT:	BT_Tool.exe	
Antenna Type:	PCB Antenna	
Antenna Gain:	1.7dBi	
Power Supply:	Adapter:	AC 120V/60Hz
	Battery:	DC 6V
Sample Received Date:	Jun. 01, 2026	
Sample tested Date:	Jun. 01, 2026 to Jun. 06, 2026	

2.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164, Test Firm Registration No.: 260439

2.5 Deviation from Standards

None.

2.6 Abnormalities from Standard Conditions

None.

2.7 Other Information Requested by the Customer

None.

3 SAR Evaluation

3.1 FCC 47CFR §2.1093 REQUIREMENT

The limit for Maximum Permissible Exposure (MPE) specified in KDB 447498 D01 General RF Exposure Guidance v06 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached. Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

3.2 Limits

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

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	

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 ≤ 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

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 is applied to determine SAR test exclusion.

3.3 Test Result

Maximum measured transmitter power.

Worst Case

Mode	frequency	Maximum Output Power	Tune up tolerance	Max Tune up
	GHz	dBm	dBm	dBm
GFSK(BT)	2.402	5.07	5±1	6
GFSK(BLE)	2.402	2.81	3±1	4

Evaluation Result

Mode	Frequency	Antenna Distance	RF output power including tune up (dBm)		SAR Test Exclusion Threshold	SAR Test Exclusion	Estimated SAR
	GHz	mm	dBm	mw			
GFSK(BT)	2.402	5	6	3.981	1.234	Yes	/
GFSK(BLE)	2.402	5	4	2.512	0.779	Yes	/

Note:

1. Remark: The worst case gain of the antenna is 1.7dBi.
2. Threshold at which no SAR required is $1.234 \leq 3.0$ for 1-g SAR, Separation distance ≤ 5 mm.
3. Threshold at which no SAR required is $0.779 \leq 3.0$ for 1-g SAR, Separation distance ≤ 5 mm.

Statement

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2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
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