



# RF EXPOSURE Test Report

**Report No.:** MTi220826012-07E2

**Date of issue:** 2022-10-27

**Applicant:** Ten-Tronics Co., Ltd.

**Product:** In-Wall CSR Bluetooth v5.0 Music Receiver

**Model(s):** A-1474WPA, A-1474WP

**FCC ID:** 2ACIA-TTBT014

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

## Instructions

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Test Result Certification	
Applicant:	Ten-Tronics Co., Ltd.
Address:	No. 33, Lane 347, Chung-San S. Road, Young-Kang District, Tainan, Taiwan
Manufacturer:	Ten-Tronics Co., Ltd.
Address:	No. 33, Lane 347, Chung-San S. Road, Young-Kang District, Tainan, Taiwan
Factory:	Ten-Tronics Co., Ltd.
Address:	No. 33, Lane 347, Chung-San S. Road, Young-Kang District, Tainan, Taiwan
Product description	
Product name:	In-Wall CSR Bluetooth v5.0 Music Receiver
Trademark:	TEN - TRONICS
Model name:	A-1474WPA
Series Model:	A-1474WP
Standards:	N/A
Test method:	KDB 447498 D01 v06
Date of Test	
Date of test:	2022-09-28 ~ 2022-10-27
Test result:	Pass

Test Engineer :

*Yanice Xie*

(Yanice Xie)

Reviewed By :

*Leon Chen*

(Leon Chen)

Approved By :

*Tom Xue*

(Tom Xue)



## RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz \* = Plane-wave equivalent power density

### MPE Calculation Method

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

$\pi$  = 3.1415926

R = distance between observation point and center of the radiator in cm (20cm)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.



## Measurement Result

### BT:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: PCB Antenna;

WIFI antenna gain: 0dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(0/10)}=1.00$

### BR+EDR:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	2.4	3±1	4	2.512	0	1.00	0.0005	1
2441		3.61	3±1	4	2.512	0	1.00	0.0005	1
2480		3.35	3±1	4	2.512	0	1.00	0.0005	1
2402	π/4-DQPSK	0.04	1±1	2	1.585	0	1.00	0.0003	1
2441		1.56	1±1	2	1.585	0	1.00	0.0003	1
2480		1.07	1±1	2	1.585	0	1.00	0.0003	1
2402	8DPSK	0.7	1±1	2	1.585	0	1.00	0.0003	1
2441		1.82	1±1	2	1.585	0	1.00	0.0003	1
2480		1.55	1±1	2	1.585	0	1.00	0.0003	1

### Conclusion:

For the max result: 0.0005≤ 1.0 SAR, No SAR is required.

----END OF REPORT----