



RF EXPOSURE Test Report

Report No.: MTi220830005-01E2

Date of issue: 2022-11-07

Applicant: Ten-Tronics Co., Ltd.

Product: WIFI Audio Receiver

Model(s): A-1469

FCC ID: 2ACIA-TTBT015

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
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5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



TEST RESULT CERTIFICATION	
Applicant's name	Ten-Tronics Co., Ltd.
Address	No. 33, Lane 347, Chung-San S. Road, Young-Kang District, Tainan, Taiwan
Manufacturer's Name	Ten-Tronics Co., Ltd.
Address	No. 33, Lane 347, Chung-San S. Road, Young-Kang District, Tainan, Taiwan
Product description	
Product name	WIFI Audio Receiver
Trademark	TEN - TRONICS
Model Name	A-1469
Series Model	N/A
Standards.....	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests	2022-10-18 ~ 2022-10-31
Test Result.....	Pass
This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.	

Testing Engineer :

David. Lee

(David Lee)

Technical Manager :

Leon Chen

(Leon Chen)

Authorized Signatory :

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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*300/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

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

P_d the limit of MPE, 1mW/cm². 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

2.4GWiFi:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm²

Antenna Type: FPC Antenna;

WIFI antenna gain: 6.95dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}=10^{(6.95/10)}=4.95$

2.4GWiFi:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna Gain Numeric	Evaluation result at 20cm Power density(mW/cm ²)	Power density Limits (mW/cm ²)
				tune-up power				
				(dBm)	(dBm)	(dBm)	(mW)	Ant A
2412	802.11b	17.84	17±1	18	63.096	4.95	0.06213	1
2437		18.14	18±1	19	79.433	4.95	0.07822	1
2462		17.58	17±1	18	63.096	4.95	0.06213	1
2412	802.11g	15.83	15±1	16	39.811	4.95	0.03920	1
2437		15.95	15±1	16	39.811	4.95	0.03920	1
2462		16.12	16±1	17	50.119	4.95	0.04936	1
2412	802.11n H20	13.19	13±1	14	25.119	4.95	0.02474	1
2437		13.35	13±1	14	25.119	4.95	0.02474	1
2462		13.2	13±1	14	25.119	4.95	0.02474	1
2422	802.11n H40	12.46	12±1	13	19.953	4.95	0.01965	1
2437		12.63	12±1	13	19.953	4.95	0.01965	1
2452		12.6	12±1	13	19.953	4.95	0.01965	1

Conclusion:

For the max result: 0.07822≤ 1.0 SAR, No SAR is required.

----END OF REPORT----