

TEST REPORT

Reference No...... : WTD24D11266998W006
FCC ID : 2AV4C-U264APL
Applicant..... : Eaton Corporation
Address..... : 10000 Woodward Ave, Woodridge, IL60517, USA
Manufacturer : Tech-Top Technology Limited
Address..... : Unit 1602, 16/F, Enterprise Square III, 39 Wang Chiu Road,
Kowloon Bay, Kowloon, Hong Kong
Product..... : Wireless Auto adapter
Model(s) : U264-001-APL, U264-001-AND
Standards..... : FCC 47CFR Part 2 Subpart J Section 2.1091
Date of Receipt sample : 2024-11-09
Date of Test : 2024-11-20 to 2025-01-17
Date of Issue..... : 2025-05-27
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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3. Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD24D11266998W006	2024-11-09	2024-11-20 to 2025-01-17	2025-05-27	Original	-	Valid

4. General Information

4.1. General Description of E.U.T.

Product:	Wireless Auto adapter
Model(s):	U264-001-APL, U264-001-AND
Model Description:	Only model name is different, The test sample model name is U264-001-APL.
Test Sample No.:	1-1/1
BT Version:	V5.4
Wi-Fi Specification:	2.4G-802.11b/g/n(HT20)/ax(HE20)/n(HT40)/ax(HE40) 5G-802.11a/ n(HT20/40)/ac(VHT20/40)/ax(HE20/40)
Hardware Version:	BY969 V1.1
Software Version:	U264-001-APL: 202412251434C U264-001-AND: 202412251815A

4.2. Details of E.U.T.

Operation Frequency:	Bluetooth: 2402-2480MHz, 79 Channels in total BLE: 2402-2480MHz, 40 Channels in total 2.4G Wi-Fi: 802.11b/g/n HT20/ax HE20: 2412~2462MHz 802.11n HT40/ax HE40: 2422~2452MHz 5G WiFi: 802.11a/n(HT20)/ac(VHT20)/ax (HE20): U-NII-1: 5180-5240MHz, U-NII-2A: 5260-5320MHz(DFS), U-NII-2C: 5500-5700MHz(DFS), U-NII-3: 5745-5825MHz 802.11n(HT40)/ac(VHT40)/ax (HE40): U-NII-1: 5190-5230MHz, U-NII-2A: 5270-5310MHz(DFS), U-NII-2C: 5510-5670MHz(DFS), U-NII-3: 5755-5795MHz
Max. RF output power:	Bluetooth: 7.66dBm BLE: 7.82dBm 2.4G Wi-Fi: 18.09dBm 5G Wifi: U-NII-1: 19.67dBm, U-NII-2A: 19.54dBm, U-NII-2C: 19.66dBm, U-NII-3: 19.48dBm
Modulation Technology:	GFSK, $\pi/4$ DQPSK, 8DPSK 802.11b: DBPSK, DQPSK, CCK 802.11a/g: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Ratings:	DC 5.0V, 1.5A
DFS Function:	Slave without radar detection
TPC Function:	Not support

Ant. information

Ant.	Type	Operation Frequencies (MHz) /Antenna Gain (dBi)				
		2402~2480	5150~5250	5250~5350	5470~5725	5725~5850
BT/BLE	PCB	-0.36	N/A	N/A	N/A	N/A
2.4G WIFI	PCB	-0.48	N/A	N/A	N/A	N/A
5G WIFI	PCB	N/A	-5.24	-4.31	-0.42	-0.66

Note:

#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTERK lab has not verified the authenticity of its information.

4.3. Test Facility

The test facility has a test site registered with the following organizations:

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files.

Registration number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476.

Waltek Testing Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration number 523476, September 10, 2019.

4.4. Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

4.5. Abnormalities from Standard Conditions

None.

5. Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	FCC Part 2.1091	PASS

6. RF Exposure

Test Requirement:	47CFR Part 2 § 2.1091 47 CFR Part 1 §1.1307 47 CFR Part 1 §1.1310
Evaluation Method:	FCC 47CFR Part 1 Subpart I Section 1.1310, 447498 D04 Interim General RF Exposure Guidance v01

6.1. Requirements

According to § 2.1091(b), A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and the body of the user or nearby persons.

This device belongs to mobile device and with multiple RF sources.

6.2. Method of Evaluation

Determination of Exemption:
For single RF sources

Option A

Option A 1-mW Test Exemption

Applies to all frequencies and all distances

- Could be considered SAR-based and MPE-based exclusions
- $P < 1\text{mW}$
- Limitation—when there are simultaneously operating transmitters this exclusion only applies when all simultaneously operating transmitters meet this exemption
- Refer 1.1307(b)(3)(i)(A) and 1.1307(b)(3)(ii)(A)

Option B SAR-Based Exemption

Frequency range 300 MHz -6 GHz, $5\text{mm} \leq \text{distance} \leq 40\text{cm}$

- The maximum time-averaged power or effective radiated power (ERP), whichever is greater, $\leq P_{th}$.
- P_{th} is calculated based on separation distance d cm from transmitter to person for the device operating at f GHz.

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20\text{ cm}} (d/20\text{ cm})^x & d \leq 20\text{ cm} \\ ERP_{20\text{ cm}} & 20\text{ cm} < d \leq 40\text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20\text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3\text{ GHz} \leq f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \leq f \leq 6\text{ GHz} \end{cases}$$

d = the separation distance (cm);

Option C MPE-Based Exemption

1.1307(b)(3)(i)(C): ERP is below a threshold calculated based on the distance R between the person and the antenna / radiating structure, where $R > \lambda / 2\pi$.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.
Note: R in meters, f in MHz	

For multiple RF sources

According to 47CFR 1.1307(b)(3)(ii), the calculation formula is as follow:

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

6.3. Evaluation Results

This device belongs to mobile device (separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and the body of the user or nearby persons) and with multiple RF sources.

Option B is applicable.

Single Source Transmissions

Description	Frequency GHz	Conducted Power dBm	Gain dBi	Tune-up dB	ERP mW	ERP _{th} mW	Ratio
Bluetooth	2.402	7.66	-0.36	±1.0	4.12	3060	0.00135
BLE	2.402	7.82	-0.36	±1.0	4.28	3060	0.00140
2.4G WIFI	2.412	18.09	-0.48	±1.0	44.27	3060	0.01447
U-NII-1	5.240	19.67	-5.24	±1.0	21.29	3060	0.00696
U-NII-2A	5.260	19.54	-4.31	±1.0	25.60	3060	0.00836
U-NII-2C	5.700	19.66	-0.42	±1.0	64.44	3060	0.02106
U-NII-3	5.755	19.48	-0.66	±1.0	58.50	3060	0.01912

Simultaneous Transmissions

Description	Calculation	Limit
BLE + 2.4G WIFI + 5G WIFI U-NII-2C	0.03693	≤1.0

Note:

1. Chose the maximum power to do analysis.
2. BT and BLE share one antenna, and can't transmit simultaneously.

Conclusion:

RF Exposure is FCC compliant.

=====End of Report=====