

## RF Exposure Report

**Report No.:** SA181025C10D

**FCC ID:** XU8TEW830MDR

**Test Model:** TEW-830MDR

**Series Model:** TEW-830MDR2K, TEW-830MDR3K

**Received Date:** Jun. 21, 2019

**Test Date:** Jul. 04 ~ Jul. 10, 2019

**Issued Date:** Jul. 23, 2019

**Applicant:** TRENDnet, Inc.

**Address:** 20675 Manhattan Place, Torrance, CA 90501 U.S.A.

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, Taiwan

**FCC Registration /** 788550 / TW0003

**Designation Number:**



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### Release Control Record

Issue No.	Description	Date Issued
SA181025C10D	Original release.	Jul. 23, 2019

## 1 Certificate of Conformity

**Product:** AC2200 WiFi Mesh Router, AC2200 WiFi Mesh Router System

**Brand:** TRENDnet

**Test Model:** TEW-830MDR

**Series Model:** TEW-830MDR2K, TEW-830MDR3K

**Sample Status:** Engineering sample

**Applicant:** TRENDnet, Inc.

**Test Date:** Jul. 04 ~ Jul. 10, 2019

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 General RF Exposure Guidance v06  
IEEE C95.3-2002

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Pettie Chen , **Date:** Jul. 23, 2019  
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Jul. 23, 2019  
Bruce Chen / Project Engineer

## 2 RF Exposure

### 2.1 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> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

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

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

G = gain of antenna in linear scale

$\pi$  = 3.1416

r = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as Mobile Device.

## 3 Calculation Result of Maximum Conducted Power

Radio	Frequency Band (MHz)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
1	WLAN 2412~2462	CDD	22.74	7.04	20	0.189	1
		Beamforming	22.47	7.04	20	0.178	1
2	WLAN 5745~5825	CDD	21.13	8.65	20	0.189	1
		Beamforming	21.13	8.65	20	0.189	1
3	WLAN 5180~5240	CDD	21.98	8.17	20	0.206	1
		Beamforming	21.98	8.17	20	0.206	1

Note:

1. Directional Gain:

2412~2462MHz Max. Directional Gain = 4.03dBi + 10log(2) = 7.04dBi

5180~5240MHz Max. Directional Gain = 5.16dBi + 10log(2) = 8.17dBi

5745~5825MHz Max. Directional Gain = 5.64dBi + 10log(2) = 8.65dBi

2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$\text{Radio 1} + \text{Radio 2} + \text{Radio 3} = 0.189 / 1 + 0.189 / 1 + 0.206 / 1 = 0.584 < 1$$

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