

RF Exposure Report

Report No.: SABDYS-WTW-P21030161

FCC ID: Q6G-AP430CR

Test Model: AP430CR

Received Date: Mar. 11, 2021

Test Date: Mar. 18 ~ Apr. 19, 2021

Issued Date: May 03, 2021

Applicant: WatchGuard Technologies, Inc.

Address: 505 Fifth Avenue South, Suite 500 Seattle WA United States 98104

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 /
Designation Number:** 788550 / TW0003



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specifically mentioned, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
3 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SABDYS-WTW-P21030161	Original release	May 03, 2021

1 Certificate of Conformity

Product: Wireless Access Point

Brand: WatchGuard

Test Model: AP430CR

Sample Status: Engineering sample

Applicant: WatchGuard Technologies, Inc.

Test Date: Mar. 18 ~ Apr. 19, 2021

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

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:** May 03, 2021
Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** May 03, 2021
Bruce Chen / Senior 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 ²)	Average Time (minutes)
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
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = 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 40cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Average Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN					
2G traffic radio (Radio 1): CDD Mode					
2412-2462	26.28	8.51	40	0.150	1
5G traffic radio (Radio 2): CDD Mode					
5180-5240	22.81	12.52	40	0.170	1
5745-5825	28.79	13.02	40	0.755	1
2G traffic radio (Radio 1): Beamforming Mode					
2412-2462	22.71	8.51	40	0.066	1
5G traffic radio (Radio 2): Beamforming Mode					
5180-5240	16.79	12.52	40	0.042	1
5745-5825	22.77	13.02	40	0.189	1
Scanning radio (Radio 3): CDD Mode					
2412-2462	24.98	8.51	40	0.111	1
5180-5240	23.09	9.51	40	0.091	1
5745-5825	23.65	10.01	40	0.116	1
BT LE					
2402-2480	6.83	5.5	40	0.001	1

Note:

1. Directional gain:

2G traffic radio: Directional gain = 5.5 dBi + 10log(2) = 8.51 dBi

5G traffic radio: 5180-5240MHz: Directional gain = 6.5 dBi + 10log(4) = 12.52 dBi

5G traffic radio: 5745-5825MHz: Directional gain = 7.0 dBi + 10log(4) = 13.02 dBi

2G Scanning radio: Directional gain = 5.5 dBi + 10log(2) = 8.51 dBi

5G Scanning radio: 5180-5240MHz: Directional gain = 6.5 dBi + 10log(2) = 9.51dBi

5G Scanning radio: 5745-5825MHz: Directional gain = 7.0 dBi + 10log(2) = 10.01dBi

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

3. 5GHz traffic radio (Radio 2) and 5G Scanning radio (Radio 3) cannot transmit in the same band at same time. 2G traffic radio (Radio 1) and 2G Scanning radio (Radio 3) cannot transmit at same time.

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

$$2G \text{ traffic radio (Radio 1)} + 5GHz \text{ traffic radio (Radio 2)} + 5G \text{ Scanning radio (Radio 3)} + BLE \\ = 0.150 / 1 + 0.755 / 1 + 0.091 / 1 + 0.001 / 1 = 0.997 < 1$$

Therefore the maximum calculations of above situations are less than the "1" limit.

---END---