

RF Exposure Report

Report No.: MFBDYS-WTW-P22090601

FCC ID: Q6G-AP332CR

Test Model: AP332CR

Received Date: May 20, 2022

Test Date: Sep. 14 ~ Sep. 20, 2022

Issued Date: Sep. 23, 2022

Applicant: WatchGuard Technologies, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City
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FCC Registration /
Designation Number: 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
MFBDYS-WTW-P22090601	Original release	Sep. 23, 2022

1 Certificate of Conformity

Product: Wireless Access Point

Brand: WatchGuard

Test Model: AP332CR

Sample Status: Engineering sample

Applicant: WatchGuard Technologies, Inc.

Test Date: Sep. 14 ~ Sep. 20, 2022

FCC Rule Part: FCC Part 2 (Section 2.1091)

Standards: 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.

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Pettie Chen / Senior Specialist

Approved by : Jeremy Lin, **Date:** Sep. 23, 2022
Jeremy Lin / 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

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

where

P_d = power density in mW/cm²

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 21cm 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 AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN, CDD Mode					
2412-2462	25.73	5.17	21	0.222	1.00
5180-5240	16.51	5.12	21	0.026	1.00
5745-5825	26.79	5.17	21	0.283	1.00
WLAN, Beamforming Mode					
2412-2462	25.29	8.18	21	0.401	1.00
5180-5240	13.41	8.13	21	0.026	1.00
5745-5825	26.78	8.18	21	0.565	1.00

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2.4GHz: Directional gain = $5.17\text{dBi} + 10\log(2) = 8.18\text{dBi}$

5180-5240MHz: Directional gain = $5.12\text{dBi} + 10\log(2) = 8.13\text{dBi}$

5745-5825MHz: Directional gain = $5.17\text{dBi} + 10\log(2) = 8.18\text{dBi}$

Conclusion:

The WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1

CPD = Calculation power density

LPD = Limit of power density

$2.4G + 5G = 0.401 / 1 + 0.565 / 1 = 0.966$

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

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