

RF Exposure Report

Report No.: SA200205C12

FCC ID: M82-EKI6333AC2GA

Test Model: EKI-6333AC-2G

Series Model: EKI-6333AC-2G-A, EKI-6333AC-2G-AXXXXXXXXXXXXXXXXXX,
EKI6333AC2GAXXXXXXXXXXXXXXXXXX (where "X" maybe any
alphanumeric character, blank or "-")

Received Date: Feb. 05, 2020

Test Date: Mar. 10 ~ Apr. 01, 2020

Issued Date: Apr. 16, 2020

Applicant: ADVANTECH CO., LTD

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

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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

| Issue No. | Description | Date Issued |
|-------------|------------------|---------------|
| SA200205C12 | Original release | Apr. 16, 2020 |

1 Certificate of Conformity

Product: Ethernet Device

Brand: Advantech

Test Model: EKI-6333AC-2G

Series Model: EKI-6333AC-2G-A, EKI-6333AC-2G-XXXXXXXXXXXXXXXXXX,
EKI6333AC2GAXXXXXXXXXXXXXXXXXX (where "X" maybe any
alphanumeric character, blank or "-")

Sample Status: Engineering sample

Applicant: ADVANTECH CO., LTD

Test Date: Mar. 10 ~ Apr. 01, 2020

Standards: FCC Part 2 (Section 2.1093)
IEEE C95.1-1992

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:** Apr. 16, 2020
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Apr. 16, 2020
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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 22cm 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 Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| WLAN 2412~2462 | 25.81 | 8.18 | 22 | 0.412 | 1 |
| WLAN 5180~5240 | 15.87 | 8.13 | 22 | 0.041 | 1 |
| WLAN 5745~5825 | 25.58 | 9.85 | 22 | 0.574 | 1 |

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

WLAN 2.4GHz: Directional gain = 5.17dBi + 10log(2) = 8.18dBi

WLAN 5180~5240MHz: Directional gain = 5.12dBi + 10log(2) = 8.13dBi

WLAN 5745~5825MHz: Directional gain = 6.84dBi + 10log(2) = 9.85dBi

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz Band + 5GHz Band = 0.412 / 1 + 0.574 / 1 = 0.986

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

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