

RF Exposure Report

Report No.: SA150507C23A

FCC ID: HDCBSAP2135

Test Model: BSAP 2135

Received Date: Apr. 17, 2015

Test Date: Apr. 17 ~ Jun 05, 2015

Issued Date: Jun 16, 2015

Applicant: Adtran

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Release Control Record

| Issue No. | Description | Date Issued |
|--------------|-------------------|--------------|
| SA150507C23A | Original release. | Jun 16, 2015 |

1 Certificate of Conformity

Product: Outdoor Wireless Access Point

Brand: Adtran

Test Model: BSAP 2135

Sample Status: Engineering sample

Applicant: Adtran

Test Date: Apr. 17 ~ Jun 05, 2015

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

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 EMC characteristics under the conditions specified in this report.

Prepared by : , **Date:** Jun 16, 2015

Polly Chien / Specialist

Approved by : , **Date:** Jun 16, 2015

Ken Liu / Senior Manager

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 | | | | |
| 300-1500 | ... | ... | F/1500 | 30 |
| 1500-100,000 | ... | ... | 1.0 | 30 |

F = Frequency in MHz

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 25cm 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) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412-2462 | 23.93 | 9.66 | 25 | 0.291 | 1 |
| 5180-5240 | 23.37 | 9.54 | 25 | 0.249 | 1 |
| 5260-5320 | 23.61 | 9.54 | 25 | 0.263 | 1 |
| 5500-5700 | 23.95 | 9.54 | 25 | 0.284 | 1 |
| 5745-5825 | 27.71 | 9.54 | 25 | 0.676 | 1 |

Note:

2.4GHz: Directional gain = $4.89\text{dBi} + 10\log(3) = 9.66\text{dBi}$

5GHz: Directional gain = $4.77\text{dBi} + 10\log(3) = 9.54\text{dBi}$

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 + WLAN 5GHz = $0.291 + 0.676 = 0.967$

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

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