

## RF Exposure Report

**Report No.:** SA121023C05A

**FCC ID:** HDCWLAN192XF1

**Test Model:** BSAP-1920

**Series Model:** BSAP-1925

**Received Date:** Aug. 07, 2015

**Test Date:** Aug. 12 ~ Sep. 08, 2015

**Issued Date:** Sep. 10, 2015

**Applicant:** Adtran

**Address:** 901 Explorer Boulevard Huntsville Alabama United States

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

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### Release Control Record

Issue No.	Description	Date Issued
SA121023C05A	Original release	Sep. 10, 2015



# 1 Certificate of Conformity

**Product:** Wireless 802.11abgn Access Point  
**Brand:** Adtran  
**Test Model:** BSAP-1920  
**Series Model:** BSAP-1925  
**Sample Status:** Engineering sample  
**Applicant:** Adtran  
**Test Date:** Aug. 12 ~ Sep. 08, 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 :** Celine Chou , **Date:** Sep. 10, 2015  
Celine Chou / Specialist

**Approved by :** Ken Liu , **Date:** Sep. 10, 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 <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

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

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

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	27.48	6	20	0.443	1
5180-5240	21.11	7.01	20	0.129	1
5745-5825	20.32	7.01	20	0.108	1

Note:

2.4GHz: Directional gain = 3dBi + 10log(2) = 6dBi

5GHz: Directional gain = 4dBi + 10log(2) = 7.01dBi

### 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

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.443 + 0.129 = 0.572$$

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

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