RF Exposure Report

Report No.: SA121012C11A

FCC ID: HDCWLAN193XF1

Test Model: BSAP-1930, BSAP-1935

Received Date: Aug. 14, 2015

Test Date: Aug. 21 ~ Sep. 08, 2015

Issued Date: Sep. 18, 2015

Applicant: Adtran

Address: 901 Explorer Boulevard, Huntsville Alabama, United States, 35806-2807

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
SA121012C11A	Original release	Sep. 18, 2015

1 Certificate of Conformity

Product:	Wireless 802.11 abgn AP
Brand:	Adtran
Test Model:	BSAP-1930, BSAP-1935
Sample Status:	ENGINEERING SAMPLE
Applicant:	Adtran
Test Date:	Aug. 21 ~ 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 : _____ , **Date:** Sep. 18, 2015

Ivy Lin / Specialist

Approved by : _____ , **Date:** Sep. 18, 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/cm^2

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 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)	Modulation mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	802.11b	23.83	9.77	20	0.456	1
	802.11g	21.27	9.77	20	0.253	1
	802.11n (20MHz)	21.15	9.77	20	0.246	1
	802.11n (40MHz)	16.49	9.77	20	0.084	1
5180-5240	802.11a (3TX)	23.48	10.77	20	0.529	1
	802.11a (1TX)	17.32	6	20	0.043	1
	802.11n (20MHz)	23.15	10.77	20	0.491	1
	802.11n (40MHz)	20.45	10.77	20	0.263	1
5745-5825	802.11a (3TX)	21.34	10.77	20	0.323	1
	802.11a (1TX)	18.64	6	20	0.058	1
	802.11n (20MHz)	20.58	10.77	20	0.271	1
	802.11n (40MHz)	20.13	10.77	20	0.245	1

NOTE:
For 2.4GHz Band: Directional gain = 5dBi + 10log(3) = 9.77dBi
For 5.0GHz Band: Directional gain = 6dBi + 10log(3) = 10.77dBi

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 = 0.456 + 0.529 = 0.985
Therefore the maximum calculations of above situation is less than the “1” limit.

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