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RF EXPOSURE REPORT

REPORT NO.: SA120720C10B
MODEL NO.: BSAP-1930, BSAP-1935
FCC ID: HDCWLAN193XF1
RECEIVED: Jul. 16, 2012
TESTED: Aug. 20 ~ Sep. 11, 2012
ISSUED: Oct. 31, 2012

APPLICANT: Adtran

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United States

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120720C10B	Original release	Oct. 31, 2012



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1. CERTIFICATION

PRODUCT: Wireless 802.11 abgn AP
MODEL NO.: BSAP-1930, BSAP-1935
BRAND: Adtran
APPLICANT: Adtran
TESTED: Aug. 20 ~ Sep. 11, 2012
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 2 (Section 2.1091)**
FCC OET Bulletin 65, Supplement C (01-01)
IEEE C95.1

The above equipment (model: BSAP-1935) 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.

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Ivy Lin / Specialist

APPROVED BY : Ken Liu , **DATE :** Oct. 31, 2012
Ken Liu / Manager



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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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.



2.4 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	9.8	20	0.459	1
	802.11g	21.27	9.8	20	0.255	1
	802.11n (20MHz)	21.15	9.8	20	0.248	1
	802.11n (40MHz)	16.49	9.8	20	0.085	1
5180-5240	802.11a (1TX)	14.21	6	20	0.021	1
	802.11a (3TX)	9.21	10.8	20	0.020	1
	802.11n (20MHz)	9.44	10.8	20	0.021	1
	802.11n (40MHz)	12.14	10.8	20	0.039	1
5745-5825	802.11a (1TX)	18.36	6	20	0.054	1
	802.11a (3TX)	21.57	10.8	20	0.343	1
	802.11n (20MHz)	21.39	10.8	20	0.329	1
	802.11n (40MHz)	20.93	10.8	20	0.296	1

NOTE:

For 2.4GHz Band: Directional gain = 5dBi + 10log(3) = 9.8dBi

For 5.0GHz Band: Directional gain = 6dBi + 10log(3) = 10.8dBi

CONCLUSION:

Both of the WLAN 2.4G & 5.0G can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5.0G = 0.459 + 0.343 = 0.802

Therefore, the maximum calculation of this situation is 0.802, which is less than the "1" limit.