RF EXPOSURE REPORT

REPORT NO.:	SA130529C21
MODEL NO.:	BR200-LTE-VZ
FCC ID:	WBV-BR200-WPL
RECEIVED:	May 20, 2013
TESTED:	May 20, 2013 ~ Mar. 12, 2014
ISSUED:	Mar. 20, 2014

APPLICANT:	Aerohive Networks, INC
ADDRESS:	330 Gibraltar Drive, Sunnyvale, CA 94089

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 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 Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA130529C21	Original release.	Mar. 20, 2014

1. CERTIFICATION

PRODUCT:	AP Router
MODEL:	BR200-LTE-VZ
BRAND:	Aerohive
APPLICANT:	Aerohive Networks, INC
TESTED:	May 20, 2013 ~ Mar. 12, 2014
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: BR200-LTE-VZ) 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 :** Mar. 20, 2014
Suntee Liu / Specialist

APPROVED BY : _____ **, DATE :** Mar. 20, 2014
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 23cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
WLAN 2.4GHz					
802.11b	21.30	2.94	23	0.040	1
802.11g	24.70	2.94	23	0.087	1
802.11n (20MHz)	27.99	8.76	23	0.712	1
WLAN 5GHz Band 1					
802.11a	15.10	5.99	23	0.019	1
802.11n (20MHz)	11.24	11.20	23	0.026	1
802.11n (40MHz)	14.00	11.20	23	0.050	1
WLAN 5GHz Band 4					
802.11a	22.60	6.16	23	0.113	1
802.11n (20MHz)	26.15	10.85	23	0.754	1
802.11n (40MHz)	23.07	10.85	23	0.371	1

Note:

WLAN 2.4GHz

802.11n Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$] = 8.76dBi

WLAN 5GHz Band 1

802.11n Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$] = 11.20dBi

WLAN 5GHz Band 4

802.11n Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$] = 10.85dBi

FREQUENCY BAND	ERP (dBm)	EIRP (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
WCDMA 826.4MHz~846.6MHz	25.28	27.43	23	0.083	0.551
CDMA 824.7MHz~848.31MHz	26.04	28.19	23	0.099	0.550
LTE 782MHz	26.45	28.60	23	0.109	0.521

FREQUENCY BAND	EIRP (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
WCDMA 1852.4~1907.6MHz	26.97	23	0.075	1
CDMA 1851.25~1908.75MHz	28.68	23	0.111	1

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 + WCDMA (826.4MHz~846.6MHz) = (0.712/1) + (0.083/0.551) = 0.863
WLAN 2.4GHz + CDMA (824.7MHz~848.31MHz) = (0.712/1) + (0.099/0.550) = 0.892
WLAN 2.4GHz + WCDMA (1852.4~1907.6MHz) = (0.712/1) + (0.075/1) = 0.787
WLAN 2.4GHz + CDMA (1851.25~1908.75MHz) = (0.712/1) + (0.111/1) = 0.823
WLAN 2.4GHz + LTE Band 13 = (0.712/1) + (0.109/0.521) = 0.921
WLAN 5GHz Band 1 + WCDMA (826.4MHz~846.6MHz) = (0.050/1) + (0.083/0.551) = 0.201
WLAN 5GHz Band 1 + CDMA (824.7MHz~848.31MHz) = (0.050/1) + (0.099/0.550) = 0.230
WLAN 5GHz Band 1 + WCDMA (1852.4~1907.6MHz) = (0.050/1) + (0.075/1) = 0.125
WLAN 5GHz Band 1 + CDMA (1851.25~1908.75MHz) = (0.050/1) + (0.111/1) = 0.161
WLAN 5GHz Band 1 + LTE Band 13 = (0.050/1) + (0.109/0.521) = 0.259
WLAN 5GHz Band 4 + WCDMA (826.4MHz~846.6MHz) = (0.754/1) + (0.083/0.551) = 0.905
WLAN 5GHz Band 4 + CDMA (824.7MHz~848.31MHz) = (0.754/1) + (0.099/0.550) = 0.934
WLAN 5GHz Band 4 + WCDMA (1852.4~1907.6MHz) = (0.754/1) + (0.075/1) = 0.829
WLAN 5GHz Band 4 + CDMA (1851.25~1908.75MHz) = (0.754/1) + (0.111/1) = 0.865
WLAN 5GHz Band 4 + LTE Band 13 = (0.754/1) + (0.109/0.521) = 0.963

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

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