

RF EXPOSURE REPORT

REPORT NO.: SA140922C14

MODEL NO.: MX64W-HW

FCC ID: UDX-60032015

RECEIVED: Sep. 22, 2014

TESTED: Oct. 01 ~ Oct. 31, 2014

ISSUED: Dec. 04, 2014

APPLICANT: Cisco Systems, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140922C14	Original release.	Dec. 04, 2014

1. CERTIFICATION

PRODUCT: Wireless 802.11abgn/ac Router
MODEL: MX64W-HW
BRAND: Cisco
APPLICANT: Cisco Systems, Inc.
TESTED: Oct. 01 ~ Oct. 31, 2014
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: FCC Part 2 (Section 2.1091)
KDB 447498 D03
IEEE C95.1

The above equipment (Model: MX64W-HW) 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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APPROVED BY :  , **DATE :** Dec. 04, 2014
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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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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)	TX	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	1TX	24.47	3.36	20	0.121	1
	2TX	27.93	6.37	20	0.535	1
5180-5240	1TX	24.73	3.60	20	0.135	1
	2TX	26.20	6.61	20	0.380	1
5745-5825	1TX	23.06	3.33	20	0.087	1
	2TX	22.77	6.34	20	0.162	1

NOTE:

2TX:

2.4GHz Band: Directional gain = 3.36dBi + 10log(2) = 6.37dBi

5.0GHz Band (5180-5240MHz): Directional gain = 3.6dBi + 10log(2) = 6.61dBi

5.0GHz Band (5745-5825MHz): Directional gain = 3.33dBi + 10log(2) = 6.34dBi

CONCLUSION:

Both of the 2.4 and 5GHz 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

$$1. \text{ WLAN 2.4G} + \text{WLAN 5.0G} = 0.535 + 0.380 = 0.915$$

Therefore, the maximum calculation of this situation is 0.915, which is less than the "1" limit.