

# RF EXPOSURE REPORT

**REPORT NO.:** SA130911C29

**MODEL NO.:** MR18-HW

**FCC ID:** UDX-60026010

**RECEIVED:** Sep. 11, 2013

**TESTED:** Oct. 28 ~ Nov. 18, 2013

**ISSUED:** Nov. 19, 2013

**APPLICANT:** Cisco Systems, Inc.

**ADDRESS:** 170 West Tasman Drive, San Jose, CA 95134

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

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**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei  
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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA130911C29	Original release.	Nov. 19, 2013



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## 1. CERTIFICATION

**PRODUCT:** Wireless 802.11 abgn AP  
**MODEL:** MR18-HW  
**BRAND:** Cisco  
**APPLICANT:** Cisco Systems, Inc.  
**TESTED:** Oct. 28 ~ Nov. 18, 2013  
**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: MR18-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.

**PREPARED BY :** Sunt Lee , **DATE :** Nov. 19, 2013  
Sunt Lee / Specialist

**APPROVED BY :** Ken Liu , **DATE :** Nov. 19, 2013  
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 23cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

RADIO	FREQUENCY BAND	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
1	WLAN 2.4GHz	29.25	4	23	0.318	1
2	WLAN 5GHz Band 4	29.79	6	23	0.571	1
3	WLAN 2.4GHz	25.28	2	23	0.080	1
	WLAN 5GHz Band 4	20.56	2	23	0.027	1

### 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

Radio 1 + Radio 2 + Radio 3 =  $0.318 + 0.571 + 0.080 = 0.969$

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

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