

RF EXPOSURE REPORT

REPORT NO.: SA130911C29A

MODEL NO.: MR18-HW

FCC ID: UDX-60026010

RECEIVED: Sep. 11, 2013

TESTED: Nov. 04 ~ Dec. 16, 2013

ISSUED: Dec. 18, 2013

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 |
|--------------|-------------------|---------------|
| SA130911C29A | Original release. | Dec. 18, 2013 |




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1. CERTIFICATION

PRODUCT: Wireless 802.11 abgn AP
MODEL: MR18-HW
BRAND: Cisco
APPLICANT: Cisco Systems, Inc.
TESTED: Nov. 04 ~ Dec. 16, 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 :  , **DATE :** Dec. 18, 2013
Ivy Lin / Specialist

APPROVED BY :  , **DATE :** Dec. 18, 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 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

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

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 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 (MHz) | MAX POWER (dBm) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/cm ²) | LIMIT (mW/cm ²) |
|-------|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 1 | 2412 ~ 2462 | 29.25 | 4 | 23 | 0.318 | 1 |
| 2 | 5250 ~ 5350 | 23.12 | 4 | 23 | 0.078 | 1 |
| | 5470 ~ 5725 | 23.16 | 4 | 23 | 0.078 | 1 |
| | 5745 ~ 5825 | 29.79 | 6 | 23 | 0.571 | 1 |
| 3 | 2412 ~ 2462 | 25.28 | 2 | 23 | 0.080 | 1 |
| | 5250 ~ 5350 | 19.88 | 2 | 23 | 0.023 | 1 |
| | 5470 ~ 5725 | 19.20 | 2 | 23 | 0.020 | 1 |
| | 5745 ~ 5825 | 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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