RF EXPOSURE REPORT

REPORT NO.: SA130725E04B

MODEL NO.: MR34-HW

FCC ID: UDX-60025010

RECEIVED: Aug. 05, 2013

TESTED: Aug. 05 to 08, 2013

ISSUED: Aug. 27, 2013

APPLICANT: Cisco Systems, Inc.

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

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

LAB ADDRESS: No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA130725E04B	Original release	Aug. 27, 2013

1. CERTIFICATION

PRODUCT: Cisco Meraki MR34

BRAND NAME: Cisco

MODEL NO.: MR34-HW

TEST SAMPLE: R&D SAMPLE

APPLICANT: Cisco Systems, Inc.

TESTED DATE: Aug. 05 to 08, 2013

STANDARDS: FCC Part 2 (Section 2.1091)

FCC OET Bulletin 65, Supplement C (01-01)

IEEE C95.1

The above equipment (Model: MR34-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 : _Phoenix Huang_ , DATE: _Aug. 27, 2013_
(Phoenix Huang, Specialist)

APPROVED BY : _____ , DATE: _Aug. 27, 2013_
(May Chen, Manager)

2. RF EXPOSURE LIMIT

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

3. 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

4. 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**.

5. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For 15.247 and 15.407 (Band: 5150MHz ~ 5250MHz) data was copied from the original test report (Report No.: SA130725E04)

For Radio Card 1:

15.247(2.4GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	158.855	4.3	20	0.08506	1

15.247(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5745 ~ 5825	79.983	5.4	20	0.05517	1

Band 1: 5150MHz ~ 5250MHz
15.407(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5180 ~ 5240	9.772	5.4	20	0.00674	1

Band 2~3: 5250~5350MHz, 5500~5600MHz & 5650~5700MHz
15.407(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5260 ~ 5320, 5500 ~ 5580, 5660 ~ 5700	49.774	5.4	20	0.03433	1

For Radio Card 0:

15.247(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5745 ~ 5825	714.410	5.6	20	0.51603	1

Band 1: 5150MHz ~ 5250MHz
15.407(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5180 ~ 5240	38.927	5.6	20	0.02812	1

Band 2~3: 5250~5350MHz, 5500~5600MHz & 5650~5700MHz
15.407(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5260 ~ 5320, 5500 ~ 5580, 5660 ~ 5700	194.327	5.6	20	0.14037	1

For Radio Card 2:

15.247(2.4GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	510.234	4.8	20	0.30655	1

CONCLUSION:

Both of the 2.4GHz and 5GHz WLAN can transmit simultaneously, the formula of calculated the MPE is:

$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \ldots\ldots$etc. < 1
CPD = Calculation power density
LPD = Limit of power density

For Radio Card 1 (2.4G) + Radio Card 2 + Radio Card 0:

Therefore, the worst-case situation is 0.08506 / 1 + 0.30655 / 1 + 0.51603 / 1= 0.908, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

For Radio Card 1 (5G) + Radio Card 2 + Radio Card 0:

Therefore, the worst-case situation is 0.05517 / 1 + 0.30655 / 1 + 0.51603 / 1= 0.878, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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