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RF Exposure Report

Report No.: SA150506E05E R1

FCC ID: QISCG1241D

Test Model: CG1241D

Series Model: CG5245

Received Date: May 06, 2015

Test Date: June 03 to 04, 2015

Issued Date: Aug. 31, 2015

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Release Control Record

Issue No.	Description	Date Issued
SA150506E05E	Original release.	Aug. 06, 2015
SA150506E05E R1	1. Modified the brand name of EUT. 2. Modified the Model name of EUT. 3. Revised the applicant and FCC ID.	Aug. 31, 2015



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1 Certificate of Conformity

Product: WiFi EMTA

Brand: Huawei

Test Model: CG1241D

Series Model: CG5245

Sample Status: ENGINEERING SAMPLE

Applicant: Huawei Technologies Co., Ltd.

Test Date: June 03 to 04, 2015

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

The above equipment 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 :

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Date:

Aug. 31, 2015

Approved by :

May Chen / Manager

Date:

Aug. 31, 2015

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 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

3 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

2.4GHz Band						
Antenna No.	PCB Chain No.	Brand	Ant. Gain(dBi) <Including cable loss>	Frequency range (GHz to GHz)	Antenna Type	Connector Type
A	Chain (1)	NA	3.76	2.4~2.4835	PCB	None (like solder)
B	Chain (2)	NA	3.87	2.4~2.4835	PCB	None (like solder)
5GHz Band						
Antenna No.	PCB Chain No.	Brand	Ant. Gain(dBi) <Including cable loss>	Frequency range (GHz to GHz)	Antenna Type	Connector Type
C	Chain (1)	Hong-Lin	5.78	5.15~5.85	PCB	i-pex(MHF)
D	Chain (2)	Hong-Lin	4.36	5.15~5.85	PCB	i-pex(MHF)

4 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	682.092	6.83	20	0.65399	1
5180-5240	115.994	8.11	20	0.14934	1
5745-5825	266.606	8.11	20	0.34324	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.83\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 8.11\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.65399 + 0.34324 = 0.997$

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

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