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RF EXPOSURE REPORT

REPORT NO.: SA111130E01

MODEL NO.: J20H045

FCC ID: MCLJ20H045

RECEIVED: Nov. 02, 2011

TESTED: Nov. 02, 2011

ISSUED: Dec. 15, 2011

APPLICANT: Hon Hai PRECISION IND.CO.,LTD

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.)
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TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1. CERTIFICATION	4
2. RF EXPOSURE LIMIT	5
3. MPE CALCULATION FORMULA	5
4. CLASSIFICATION	5
5. ANTENNA GAIN	5
6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER	6



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA111130E01	Original release	Dec. 15, 2011



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1.CERTIFICATION

PRODUCT: WiFi Module

BRAND NAME: FOXCONN

MODEL NO.: J20H045

TEST SAMPLE: R&D SAMPLE

TESTED: Nov. 02, 2011

APPLICANT: Hon Hai PRECISION IND.CO.,LTD

STANDARDS: FCC Part 2 (Section 2.1091)

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

IEEE C95.1

The above equipment (Model: J20H045) 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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(Phoenix Huang, Specialist)

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(May Chen, Deputy 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/cm²

Pout = 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

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. Antenna Gain

1. There are three antennas provided to this EUT, please refer to the following table:

No.	Type	Connector	Gain (dBi) <include cable loss>	Cable loss(dB)	Cable length (cm)	Diversity Function	For which port
1	PCB trace	U.FL	2.58	0.36	10	Yes	Wi-Fi AUX
2	PCB trace	U.FL	2.66	0.576	16	Yes	Wi-Fi main
3	PCB trace	U.FL	2.48	0.82	23	No	BT



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6.CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For WLAN:

802.11b:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2412-2462	190.5	2.7	20	0.071	1.00

802.11g:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2412-2462	234.4	2.7	20	0.087	1.00

802.11n(20MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2412-2462	229.1	2.7	20	0.085	1.00

802.11n(40MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2422-2452	182.0	2.7	20	0.067	1.00



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For Bluetooth:

GFSK:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2402 ~ 2480	1.479	2.5	20	0.001	1.00

8DPSK:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2402 ~ 2480	1.318	2.5	20	0.001	1.00

CONCLUSION:

Both of the WLAN and Bluetooth can transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.087 / 1 + 0.001 / 1 = 0.088$, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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