

RF EXPOSURE REPORT

REPORT NO.: SA140923E06

MODEL NO.: J20H085

FCC ID: MCLJ20H085

RECEIVED: Sep. 23, 2014

TESTED: Sep. 30 to Oct. 01, 2014

ISSUED: Nov. 11, 2014

APPLICANT: Hon Hai PRECISION IND.CO.,LTD

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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
SA140923E06	Original release	Nov. 11, 2014




A D T

1. CERTIFICATION

PRODUCT: 802.11abgn/BT3.0 Wireless Module
BRAND NAME: FOXCONN
MODEL NO.: J20H085
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Hon Hai PRECISION IND.CO.,LTD
TESTED DATE: Sep. 30 to Oct. 01, 2014
STANDARDS: FCC Part 2 (Section 2.1091)
KDB 447498 D03
IEEE C95.1

The above equipment (Model: J20H085) 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:** Nov. 11, 2014
(Lori Chung, Specialist)

Approved By : , **Date:** Nov. 11, 2014
(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

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

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

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

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

Set 1								
Transmitter Circuit	Brand	Model	Gain (dBi) (Include cable loss)	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length (mm)	Frequency range (MHz to MHz)
Chain (0)	NA	NA	-0.4	NA	PCB	NA	NA	2400~2483.5
			1.12					5150~5850
Chain (1)	NA	NA	0.28	NA	PCB	NA	NA	2400~2483.5
			0.9					5150~5850
Set 2								
Transmitter Circuit	Brand	Model	Gain (dBi) (Include cable loss)	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length (mm)	Frequency range (MHz to MHz)
Chain (0)	WIESON	Z-Y121JT008A-013-S	2.26	0.5	Dipole	IPEX	100	2400~2483.5
			3.22	1				5150~5850
Chain (1)	WIESON	Z-Y121JT008A-013-S	2.26	0.5	Dipole	IPEX	100	2400~2483.5
			3.22	1				5150~5850
Set 3								
Transmitter Circuit	Brand	Model	Gain (dBi) (Include cable loss)	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length (mm)	Frequency range (MHz to MHz)
Chain (0)	FOXCONN	FX01K03-SN-EF	1.2	0.87	Dipole	IPEX MHF	217	2400~2483.5
			1.2	NA				5150~5850
Chain (1)	FOXCONN	FX01K03-SN-EF	1.2	0.87	Dipole	IPEX MHF	217	2400~2483.5
			1.2	NA				5150~5850
Set 4								
Transmitter Circuit	Brand	Model	Gain (dBi) (Include cable loss)	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length (mm)	Frequency range (MHz to MHz)
Chain (0)	WIESON	Y121JT008A-016-S	1.78	1	Dipole	IPEX	200	2400~2483.5
			2.78	1.5				5150~5850
Chain (1)	WIESON	Y121JT008A-016-S	1.78	1	Dipole	IPEX	200	2400~2483.5
			2.78	1.5				5150~5850
For above antenna set, antenna set 1 & 2 were selected as representative antenna for the test and its data was recorded in this report.								

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For WLAN: 15.247(2.4GHz)

802.11b

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	151.356	2.26	20	0.05067	1.00

802.11g

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	317.687	2.26	20	0.10635	1.00

802.11n (HT20)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	320.627	2.26	20	0.10733	1.00

For WLAN: 15.407(5GHz)

802.11a

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180 - 5240, 5260 - 5320, 5500 – 5700 & 5745 - 5825	151.705	3.22	20	0.06335	1.00

802.11n (HT20)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180 - 5240, 5260 - 5320, 5500 – 5700 & 5745 - 5825	139.637	3.22	20	0.05831	1.00

802.11n (HT40)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5190 - 5230, 5270 - 5310, 5510 – 5670 & 5755 - 5795	110.408	3.22	20	0.04610	1.00

For Bluetooth:

GFSK

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2402-2480	4.046	2.26	20	0.00135	1.00

8DPSK

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2402-2480	5.794	2.26	20	0.00194	1.00

CONCLUSION:

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

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 +etc. < 1$$

CPD = Calculation power density

LPD = Limit of power density

For WLAN (5G) and Bluetooth:

Therefore, the worst-case situation is $0.06335 / 1 + 0.00194 / 1 = 0.065$, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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