RF EXPOSURE REPORT

REPORT NO.:	SA140606E01
MODEL NO.:	T77H526
FCC ID:	MCLT77H526
RECEIVED:	June 06, 2014
TESTED:	July 01 to 02, 2014
ISSUED:	July 09, 2014

APPLICANT:	Hon Hai PRECISION IND.CO.,LTD
ADDRESS:	5F-1, Hsin-An Road, Hsinchu, Science Industrial Park, Taiwan, R.O.C.

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.
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan 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
SA140606E01	Original release	July 09, 2014

1. CERTIFICATION

PRODUCT:	802.11ac+802.11abgn + BT4.0+BT3.0+BT2.1/EDR Module
BRAND NAME:	FOXCONN
MODEL NO.:	T77H526
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Hon Hai PRECISION IND.CO.,LTD
TESTED DATE:	July 01 to 02, 2014
STANDARDS:	FCC Part 2 (Section 2.1091)
	FCC OET Bulletin 65, Supplement C (01-01)
	IEEE C95.1

The above equipment (Model: T77H526) 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:** *July 09, 2014*
(Lori Chung, Specialist)

APPROVED BY : _____ , **DATE:** *July 09, 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

$Pd = (Pout*G) / (4*pi*r^2)$

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. ANTENNA GAIN

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

Antenna No.	Transmitter Circuit	Brand	Model	Antenna Gain(dBi) <include cable loss>	Cable Loss (dB)	Frequency range (MHz to MHz)	Antenna Type	Connecter Type	Cable Length (mm)
1	Chain (0)	Wistron Neweb Corporation	DC33001KT00 (Main port)	1.54	1.38	2400~2500	PIFA	I-PEX	363
				1.26	1.98	5150~5350			
				0.57	2.04	5470~5725			
				1.23	2.08	5725~5850			
2	Chain (1)	Wistron Neweb Corporation	DC33001KT10 (Aux port)	0.63	2.13	2400~2500	PIFA	I-PEX	593
				0.16	3.11	5150~5350			
				0.35	3.21	5470~5725			
				1.84	3.27	5725~5850			

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	113.018	4.11	20	0.05793	1.00

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.11dBi.

802.11g

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
2412 - 2462	606.691	4.11	20	0.31095	1.00

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.11dBi.

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	603.594	4.11	20	0.30937	1.00

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.11dBi.

802.11n (HT40)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
2422 - 2452	472.94	4.11	20	0.24240	1.00

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.11dBi.

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	56.013	4.55	20	0.03177	1.00

NOTE: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 4.55dBi.

802.11ac (VHT20)

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	57.161	4.55	20	0.03242	1.00

NOTE: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 4.55dBi.

802.11ac (VHT40)

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	51.021	4.55	20	0.02894	1.00

NOTE: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 4.55dBi.

802.11ac (VHT80)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
5210 - 5290, 5530, 5610 & 5775	50.873	3.47	20	0.02250	1.00

NOTE: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 3.47dBi.

For Bluetooth:

GFSK

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2402-2480	2.460	1.54	20	0.00070	1.00

8DPSK

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2402-2480	5.000	1.54	20	0.00142	1.00

BT-LE (GFSK)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2402 - 2480	5.236	1.54	20	0.00149	1.00

CONCLUSION:

Both of the Bluetooth and WLAN 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 (2.4G) and Bluetooth:

Therefore, the worst-case situation is 0.31095 / 1 + 0.00149 / 1 = 0.312, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.

For WLAN (5G) and Bluetooth:

Therefore, the worst-case situation is 0.03242 / 1 + 0.00149 / 1 = 0.034, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.

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