



# FCC RF Test Report

**APPLICANT** : Wistron NeWeb Corporation  
**EQUIPMENT** : LGA Module  
**BRAND NAME** : Wistron Neweb Corporation  
**MODEL NAME** : M14Q2FG, M14Q2F  
**FCC ID** : NKRM18Q2  
**STANDARD** : FCC 47 CFR Part 2, 22(H), 24(E)  
**CLASSIFICATION** : PCS Licensed Transmitter (PCB)

This is a variant report which is only valid together with the original test report. The product was received on Jun. 25, 2016 and testing was completed on Jun. 30, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



## **SPORTON INTERNATIONAL INC.**

**No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.**



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**APPENDIX A. TEST RESULTS OF CONDUCTED TEST**



## REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE																						
FG622607-03A	Rev. 01	<p>This is a variant report. The original report which can be referred to Sporton Report No. FG622607</p> <p>Detail changes list as below :</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #cccccc;"> <th rowspan="2">Project no.</th> <th rowspan="2">Device</th> <th rowspan="2">Type</th> <th colspan="2">Current Spec</th> </tr> <tr style="background-color: #cccccc;"> <th></th> <th>GPS</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">622607</td> <td style="text-align: center;">M18Q2F</td> <td style="text-align: center;">Parent</td> <td>CAT 4 LTE(B2/4/5/12) + UMTS(B2/5)</td> <td style="text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">622607-03</td> <td style="text-align: center;">M14Q2F</td> <td style="text-align: center;">Variant</td> <td>CAT 1 LTE(B2/4/5/12) + UMTS(B2/5)</td> <td style="text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">622607-03</td> <td style="text-align: center;">M14Q2FG</td> <td style="text-align: center;">Variant</td> <td>CAT 1 LTE(B2/4/5/12) + UMTS(B2/5) + GPS</td> <td style="text-align: center;">Yes</td> </tr> </tbody> </table> <p>For the changes, the conducted output power case was verified.</p>	Project no.	Device	Type	Current Spec			GPS	622607	M18Q2F	Parent	CAT 4 LTE(B2/4/5/12) + UMTS(B2/5)	No	622607-03	M14Q2F	Variant	CAT 1 LTE(B2/4/5/12) + UMTS(B2/5)	No	622607-03	M14Q2FG	Variant	CAT 1 LTE(B2/4/5/12) + UMTS(B2/5) + GPS	Yes	Jul. 07, 2016
Project no.	Device	Type				Current Spec																			
				GPS																					
622607	M18Q2F	Parent	CAT 4 LTE(B2/4/5/12) + UMTS(B2/5)	No																					
622607-03	M14Q2F	Variant	CAT 1 LTE(B2/4/5/12) + UMTS(B2/5)	No																					
622607-03	M14Q2FG	Variant	CAT 1 LTE(B2/4/5/12) + UMTS(B2/5) + GPS	Yes																					



### SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-



# 1 General Description

## 1.1 Applicant

**Wistron NeWeb Corporation**

20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C

## 1.2 Manufacturer

**Wistron NeWeb Corporation**

20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C

## 1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	LGA Module
Brand Name	Wistron Neweb Corporation
Model Name	M14Q2FG, M14Q2F
FCC ID	NKRM18Q2
EUT supports Radios application	WCDMA/HSPA/LTE
HW Version	v1.0
SW Version	M14Q2_v12.04
EUT Stage	Production Unit

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	<b>WCDMA:</b> Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz
<b>Rx Frequency</b>	<b>WCDMA:</b> Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz
<b>Maximum Output Power to Antenna</b>	<b>WCDMA:</b> Band V: 23.74 dBm Band II: 23.44 dBm
<b>Antenna Type</b>	Fixed External Antenna
<b>Type of Modulation</b>	WCDMA: QPSK (Uplink) HSDPA: 64QAM (Downlink) HSUPA: QPSK (Uplink)



### 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

### 1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

<b>Test Site</b>	SPORTON INTERNATIONAL INC.
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978
<b>Test Site No.</b>	<b>Sporton Site No.</b> TH02-HY

### 1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.



## 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

Antenna port conducted test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported below:

Test Modes	
Band	Conducted TCs
WCDMA Band V	■ RMC 12.2KbpsLink
WCDMA Band II	■ RMC 12.2KbpsLink

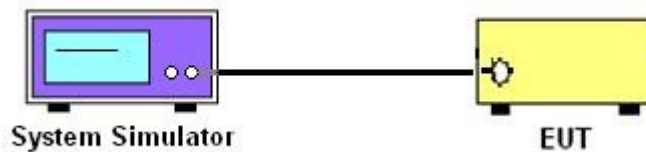
### 3 Conducted Test Result

#### 3.1 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.2 Test Setup

##### 3.2.1 Conducted Output Power



#### 3.3 Test Result of Conducted Test

Please refer to Appendix A.

#### 3.4 Conducted Output Power

##### 3.4.1 Description of the Conducted Output Power

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

##### 3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.





## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Wireless Communicatio	Agilent	E5515C	MY50266977	N/A	May 17, 2016	Jun. 30, 2016	May 16, 2017	Conducted (TH02-HY)



# Appendix A. Test Results of Conducted Test

## Conducted Output Power(Average power)

Conducted Power (*Unit: dBm)						
Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency	826.4	836.4	846.6	1852.4	1880	1907.6
RMC 12.2K	23.74	23.54	23.66	23.20	23.26	23.44
HSDPA Subtest-1	22.59	22.38	22.43	22.12	22.15	22.41
HSDPA Subtest-2	22.72	22.55	22.70	22.23	22.22	22.44
HSDPA Subtest-3	22.09	22.07	22.12	21.66	22.43	21.96
HSDPA Subtest-4	22.23	22.07	22.12	21.68	21.79	21.95
HSUPA Subtest-1	22.05	22.13	22.19	22.03	22.00	22.19
HSUPA Subtest-2	21.63	21.48	21.35	21.12	21.14	21.40
HSUPA Subtest-3	21.16	21.41	21.15	21.01	21.07	21.29
HSUPA Subtest-4	21.62	21.96	21.98	21.82	21.83	21.94
HSUPA Subtest-5	22.64	22.47	22.52	22.19	22.21	22.46