# RF Exposure Report

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|---|---|
| **Report No.:** | SA180503E05 |
| **FCC ID:** | MCLT77W980 |
| **Test Model:** | T77W980 |
| **Received Date:** | May 03, 2018 |
| **Test Date:** | May 10 to 24, 2018 |
| **Issued Date:** | June 19, 2018 |
| **Applicant:** | HON HAI PRECISION IND. CO., LTD. |
| **Address:** | 5F-1,5 Hsin-An Road Hsinchu, Science-Based Industrial Park Taiwan, R.O.C. |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory |
| **Lab Address:** | E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C. |
| **Test Location:** | E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C. |
| **FCC Registration / Designation Number:** | 723255 / TW2022 |

## Table of Contents

## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| SA180503E05 | Original release. | June 19, 2018 |

## 1 Certificate of Conformity

| | |
|---|---|
| **Product:** | Gigabit RF Card |
| **Brand:** | FOXCONN |
| **Test Model:** | T77W980 |
| **Sample Status:** | ENGINEERING SAMPLE |
| **Applicant:** | HON HAI PRECISION IND. CO., LTD. |
| **Test Date:** | May 10 to 24, 2018 |
| **Standards:** | FCC Part 2 (Section 2.1091)<br>KDB 447498 D01 General RF Exposure Guidance v06<br>IEEE C95.1-1992 |

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 :** _____ , **Date:** June 19, 2018

Wendy Wu / Specialist

**Approved by :** _____ , **Date:** June 19, 2018

May Chen / Manager

## 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 | | | | |
| 1.34-30 | 824/f | 2.19/f | *($180/f^2$) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | … | … | F/1500 | 30 |
| 1500-100,000 | … | … | 1.0 | 30 |

F = Frequency in MHz

### 2.2 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

### 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**.

## 2.4 Antenna Gain

| Antenna No. | Antenna Gain(dBi) | Frequency range (MHz) | Antenna Type | Connecter Type | Cable Length |
|---|---|---|---|---|---|
| 1 | Please refer to below table | 699~803 | PIFA | i-pex(MHF) | 100mm |
| 2 | Please refer to below table | 791~960<br>1447.9~1606 | PIFA | i-pex(MHF) | 100mm |
| 3 | Please refer to below table | 1710~2170<br>2500~2690 | PIFA | i-pex(MHF) | 100mm |
| 4 | Please refer to below table | 5110~5925<br>(for LAA RX) | PIFA | i-pex(MHF) | 100mm |
| 5 | Please refer to below table | 2305~2315 | Dipole | i-pex(MHF) | 80mm |

| Antenna gain list | | | |
|---|---|---|---|
| Antenna No. | Band | Freq. Range (MHz) | Gain (dBi) |
| 3 | WCDMA II (B2) | 1850~1910 | 4.92 |
| 3 | WCDMA IV (B4) | 1710~1755 | 5.99 |
| 2 | WCDMA V (B5) | 824~849 | 2.68 |
| 3 | LTE Band (2) | 1850~1910 | 4.92 |
| 3 | LTE Band (4) | 1710~1755 | 5.99 |
| 2 | LTE Band (5) | 824~849 | 2.68 |
| 3 | LTE Band (7) | 2500~2570 | 5.2 |
| 1 | LTE Band (12) | 698~716 | 4.17 |
| 1 | LTE Band (13) | 777~787 | 3.05 |
| 1 | LTE Band (14) | 788~798 | 2.87 |
| 1 | LTE Band (17) | 704~716 | 4.17 |
| 3 | LTE Band (25) | 1850~1915 | 4.92 |
| 2 | LTE Band (26) | 814~849 | 2.92 |
| 5 | LTE Band (30) | 2305~2315 | 3.02 |
| 3 | LTE Band (38) | 2570~2620 | 4.82 |
| 3 | LTE Band (41) | 2496~2690 | 5.38 |
| 3 | LTE Band (66) | 1710~1780 | 5.99 |
| 1 | LTE Band (71) | 663~698 | 3.83 |

2.5 Calculation Result

| Operation Mode | Evaluation Frequency (MHz) | Max.Conducted Power | | Antenna Gain (dBi) | Distance (cm) | Power Density ($mW/cm^2$) | Limit ($mW/cm^2$) |
|---|---|---|---|---|---|---|---|
| | | (mW) | (dBm) | | | | |
| WCDMA B2 | 1852.4 | 316.228 | 25.00 | 4.92 | 20 | 0.19531 | 1 |
| WCDMA B4 | 1712.4 | 251.189 | 24.00 | 5.99 | 20 | 0.19849 | 1 |
| WCDMA B5 | 826.4 | 316.228 | 25.00 | 2.68 | 20 | 0.11661 | 0.550933 |
| LTE B2 | 1850.7 | 316.228 | 25.00 | 4.92 | 20 | 0.19531 | 1 |
| LTE B4 | 1710.7 | 251.189 | 24.00 | 5.99 | 20 | 0.19849 | 1 |
| LTE B5 | 824.7 | 316.228 | 25.00 | 2.68 | 20 | 0.11661 | 0.5498 |
| LTE B7 | 2502.5 | 316.228 | 25.00 | 5.20 | 20 | 0.20832 | 1 |
| LTE B12 | 699.7 | 316.228 | 25.00 | 4.17 | 20 | 0.16433 | 0.466467 |
| LTE B13 | 779.5 | 316.228 | 25.00 | 3.05 | 20 | 0.12698 | 0.519667 |
| LTE B14 | 790.5 | 316.228 | 25.00 | 2.87 | 20 | 0.12182 | 0.527 |
| LTE B17 | 706.5 | 316.228 | 25.00 | 4.17 | 20 | 0.16433 | 0.471 |
| LTE B25 | 1850.7 | 316.228 | 25.00 | 4.92 | 20 | 0.19531 | 1 |
| LTE B26 (Part 90) | 814.7 | 316.228 | 25.00 | 2.92 | 20 | 0.12323 | 0.543133 |
| LTE B26 (Part 22) | 824.7 | 316.228 | 25.00 | 2.92 | 20 | 0.12323 | 0.5498 |
| LTE B41 | 2498.5 | 316.228 | 25.00 | 5.38 | 20 | 0.21713 | 1 |
| LTE B66 | 1710.7 | 251.189 | 24.00 | 5.99 | 20 | 0.19849 | 1 |
| LTE B38 | 2572.5 | 316.228 | 25.00 | 4.82 | 20 | 0.19087 | 1 |
| LTE B71 | 665.5 | 316.228 | 25.00 | 3.83 | 20 | 0.15196 | 0.443667 |
| LTE B5 (10M+5M) | 834+841.2 | 316.228 | 25.00 | 2.68 | 20 | 0.11661 | 0.5498 |
| LTE B7 (10M+20M) | 2545.6+2560 | 316.228 | 25.00 | 5.20 | 20 | 0.20832 | 1 |
| LTE B38 (15M+15M) | 2577.5+2592.5 | 316.228 | 25.00 | 4.82 | 20 | 0.19087 | 1 |
| LTE B41 (10M+5M) | 2593+2600.2 | 316.228 | 25.00 | 5.38 | 20 | 0.21713 | 1 |

Note:
1. Limit of Power Density = F/1500 (For frequency below 1500MHz)
2. This power include tune-up tolerance range that specified in T77W980 Tune Up power table.

| Operation Mode | Evaluation Frequency (MHz) | Max. EIPR Power | | Distance (cm) | Power Density ($mW/cm^2$) | Limit ($mW/cm^2$) |
|---|---|---|---|---|---|---|
| | | (mW) | (dBm) | | | |
| LTE B30 | 2310 | 250 | 23.98 | 20 | 0.04974 | 1 |

Note: This power include tune-up tolerance range that specified in T77W980 Tune Up power table.

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