

## RF Exposure Report

**Report No.:** SA181008C16

**FCC ID:** NKRUMC-9628FHN

**Test Model:** UMC-9628FHN

**Received Date:** Oct. 08, 2018

**Date of Evaluation:** Nov. 09, 2018

**Issued Date:** Dec. 18, 2018

**Applicant:** Wistron NeWeb Corporation

**Address:** 20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

**Test Location:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City 33383, Taiwan (R.O.C)

**FCC Registration /  
Designation Number:** 788550 / TW0003



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### Release Control Record

Issue No.	Description	Date Issued
SA181008C16	Original Release	Dec. 18, 2018

## 1 Certificate of Conformity

**Product:** LTE Module

**Brand:** Wistron NeWeb Corp.

**Test Model:** UMC-9628FHN

**Sample Status:** Identical Prototype

**Applicant:** Wistron NeWeb Corporation

**Date of Evaluation:** Nov. 09, 2018

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

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 RF characteristics under the conditions specified in this report.

**Prepared by :**



**Date:** Dec. 18, 2018

Gina Liu / Specialist

**Approved by :**



**Date:** Dec. 18, 2018

Dylan Chiou / Project Engineer

## 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 <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	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 ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 26cm away from the body of the user.  
So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

Antenna Type	Antenna Gain (dBi)									
	GSM 850	PCS1900	WCDMA II	WCDMA V	LTE 2	LTE 4	LTE 5	LTE 7	LTE 12	LTE 17
Fixed External	1.6	3.3	3.3	1.6	3.3	3.6	1.6	2.6	1.5	1.5

## 2.5 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
GSM850	824-849	35.0	1.6	26	0.538	0.55
PCS1900	1850-1910	32.0	3.3	26	0.399	1.00
WCDMA II	1850-1910	25.7	3.3	26	0.094	1.00
WCDMA V	824-849	25.7	1.6	26	0.063	0.55
LTE 2	1850-1910	25.7	3.3	26	0.094	1.00
LTE 4	1710-1755	25.7	3.6	26	0.100	1.00
LTE 5	824-849	25.7	1.6	26	0.063	0.55
LTE 7	2500-2570	25.7	2.6	26	0.080	1.00
LTE 12	699-716	25.7	1.5	26	0.062	0.47
LTE 17	704-716	25.7	1.5	26	0.062	0.47

### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

GSM850:  $0.538/0.55 = 0.978$

**Therefore the maximum calculations of above situations are less than the “1” limit.**

**--- END ---**