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 : Gina Liu , **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^2)	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	($180/f^2$)*	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 ; *Plane-wave equivalent power density

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 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^2)	Limit (mW/cm^2)
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 + ……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.

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