

RF Exposure Report

Report No.: SA200130C10A

FCC ID: NKR-TR1V1-IDU

Test Model: TR1V1

Received Date: Jan. 31, 2020

Test Date: Feb. 06 ~ Mar. 11, 2020

Issued Date: Mar. 30, 2020

Applicant: Wistron NeWeb Corp.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003

Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA200130C10A	Original release	Mar. 30, 2020

1 Certificate of Conformity

Product: Verizon 5G Extender

Brand: Verizon

Test Model: TR1V1

Sample Status: Engineering sample

Applicant: Wistron NeWeb Corp.

Test Date: Feb. 06 ~ Mar. 11, 2020

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

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 : Pettie Chen , **Date:** Mar. 30, 2020
Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Mar. 30, 2020
Bruce Chen / Senior 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

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

where

Pd = power density in mW/cm²

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 32cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
BT LE	10.63	4	32	0.002	1

Mode	Frequency Band	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Relay	27.5 GHz ~ 28.35 GHz	24.36	32	0.021	1
Donor	27.5 GHz ~ 28.35 GHz	41.06	32	0.992	1

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Conclusion:

BT LE and Relay or Donor can transmit at same time.

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$BT\ LE + Donor = 0.002 / 1 + 0.992 / 1 = 0.994$

Therefore the maximum calculations of above situations are less than the "1" limit.

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