RF Exposure Report

Report No.:	SA190531C22E
FCC ID:	VBNAHIB-01
Test Model:	AHIB
Received Date:	Jun. 03, 2020
Test Date:	Jul. 09 ~ Jul. 20, 2020
Issued Date:	Jul. 21, 2020
Applicant:	Nokia Solutions and Networks
Address:	3201 Olympus Blvd, Dallas, Texas 75019
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA190531C22E	Original release	Jul. 21, 2020

1 Certificate of Conformity

Product:	AirScale Base Station RRH 2100MHz
Brand:	Nokia
Test Model:	AHIB
Sample Status:	MASS-PRODUCTION
Applicant:	Nokia Solutions and Networks
Test Date:	Jul. 09 ~ Jul. 20, 2020
Standards:	FCC Part 2 (Section 2.1091)
References Test Guidance:	KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1

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:** Jul. 21, 2020

Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Jul. 21, 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)
(A)Limits For Occupational / Control Exposures				
0.3-3.0	614	1.63	(100)*	6
3.0-30	1824/f	4.89/f	(900/f2)*	6
30-300	61.4	0.163	1.0	6
300-1500	…	…	f/300	6
1500-100,000	…	…	5	6
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

For General Population:

The antenna of this product, under normal use condition, is greater than 280cm away from the body of the user. So, this device is classified as fixed Device.

For Occupational Population:

The antenna of this product, under normal use condition, is at least 126cm away from the body of the user. So, this device is classified as fixed device and installations by professional service personnel.

3 Antenna Gain

Antenna Type	Direction Panel antenna with 12.5dBi gain
Antenna Model	AAFA
Antenna Ports	Nex10
Antenna Connector	N type

Note:
1. This device operate with Multiple Antennas Using Multiple-input, Multiple-output (MIMO) Technology for uncorrelated Transmission.
2. A representative Nokia antenna, AAFA 12.5dBi, is referred to comply with the EIRP limits.
3. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

4 Calculation Result of Maximum Conducted Power

For Output Power Measurement on WCDMA Band 10 + LTE Band 66, 5GNR n66 and 5GNR n66 + LTE Band 66 data are copied from the original test report (Report No.: SA190531C22, SA190531C22B, SA190531C22D)

5 Calculation Result of Maximum Tune up Power

For General Population:

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band 10 + LTE Band 66	2110 ~ 2200	59.93	280	0.999	1
5GNR n66	2110 ~ 2200	55.99	280	0.403	1
5GNR n66 + LTE Band 66	2110 ~ 2200	55.82	280	0.388	1
LTE Band 66 (Channel Bandwidth 70MHz)	2110 ~ 2200	55.76	280	0.382	1

For Occupational Population:

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band 10 + LTE Band 66	2110 ~ 2200	59.93	126	4.932	5
5GNR n66	2110 ~ 2200	55.99	126	1.991	5
5GNR n66 + LTE Band 66	2110 ~ 2200	55.82	126	1.914	5
LTE Band 66 (Channel Bandwidth 70MHz)	2110 ~ 2200	57.26	126	1.888	5

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

6 Brief Summary of results

The wireless device described within this report has been shown to be capable of compliance with the basic restrictions related to human exposure to electromagnetic fields for both General public and Occupational. The calculations shown in this report were made in accordance the procedures specified in the applied test specification(s)

Configuration	Required Compliance Boundary(cm)	
	Occupational	General Population
WCDMA Band 10 + LTE Band 66	126	280
5GNR n66	126	280
5GN n66 + LTE Band 66	126	280
LTE Band 66 (Channel Bandwidth 70MHz)	126	280

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