RF Exposure Report

C2PC (Class II Permissive Change)

Report No.:	SA180905C04D
FCC ID:	2AD8UAHCE01
Test Model:	AHCE
Received Date:	Jan. 30, 2019
Test Date:	Feb. 27 ~ Feb. 28, 2019, Apr. 30 ~ May 02, 2019, Aug. 08 ~ Aug. 14, 2019, Mar. 08 ~ Mar. 09, 2020
Issued Date:	Mar. 19, 2020
Applicant:	Nokia Solutions and Networks, OY
Address:	2000 W. Lucent Lane, Naperville, IL 60563, USA
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

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Release Control Record

Issue No.	Description	Date Issued
SA180905C04D	Original release	Mar. 19, 2020

1 Certificate of Conformity

Product:	AirScale Micro Remote Radio Head
Brand:	Nokia
Test Model:	AHCE
Sample Status:	Mass product
Applicant:	Nokia Solutions and Networks, OY
Test Date:	Feb. 27 ~ Feb. 28, 2019, Apr. 30 ~ May 02, 2019 and Aug. 08 ~ Aug. 14, 2019, Mar. 08 ~ Mar. 09, 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 : Polly Chien , **Date:** Mar. 19, 2020

Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** Mar. 19, 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/cm2)	Average Time (minutes)
(A)Limits For Occupational / Control Exposures				
300-1500	…	…	F/300	6
1500-100,000	…	…	5	6
(B)Limits For General Population / Uncontrolled Exposure				
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

For General Population

The antenna of this product, under normal use condition, is at least 265cm 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 119cm away from the body of the user. So, this device is classified as **fixed device**.

2.4 Antenna Gain

Model Name	AABA
Sales Item	474230A
Antenna Spec.	Calculation based on the gain of this example Nokia antenna is a maximum of 7dBi ± 1dBi.
Antenna Gain	8dBi

Note: An representative Nokia antenna, AABA 8dBi antenna, is referred to comply with the EIRP limits.

2.5 Calculation Result of Maximum Conducted Power

For new Output Power Measurement on 5G NR n5 band and the NB-ioT Band 5 and LTE Band5 data are copied from the original test report (Report No.: SA180905C04A and SA180905C04C)

3 Calculation Result of Maximum Tune up Power

For General Population

Function	Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
LTE Band 5	869.7-893.3	54.94	57.09	265	0.580	0.580
LTE Band 5 NB-IoT Guard Band	874-889	49.41	51.56	265	0.162	0.583
LTE Band 5 NB-IoT In Band	874-889	50.00	52.15	265	0.186	0.583
n5	871.5-891.5	48.83	50.98	265	0.142	0.583

For Occupational Population

Function	Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
LTE Band 5	869.7-893.3	54.94	57.09	119	2.875	2.899
LTE Band 5 NB-IoT Guard Band	874-889	49.41	51.56	119	0.805	2.913
LTE Band 5 NB-IoT In Band	874-889	50.00	52.15	119	0.922	2.913
n5	871.5-891.5	48.83	50.98	119	0.704	2.913

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

4 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
LTE Band 5	119	265
LTE Band 5 NB-IoT Guard Band	119	265
LTE Band 5 NB-IoT In Band	119	265
n5	119	265

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