

## RF Exposure Report

**Report No.:** SA191015C05

**FCC ID:** VBNAHFB-01

**Test Model:** AHFB

**Received Date:** Oct. 15, 2019

**Test Date:** Oct. 21 ~ Oct. 23, 2019

**Issued Date:** Oct. 24, 2019

**Applicant:** Nokia Solutions and Networks

**Address:** 6000 Connection Drive, Irving, TX 75039

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

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

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



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### Release Control Record

Issue No.	Description	Date Issued
SA191015C05	Original release	Oct. 24, 2019

## 1 Certificate of Conformity

**Product:** AirScale Base Station RRH 1.9GHz  
**Brand:** Nokia  
**Test Model:** AHFB  
**Sample Status:** Production Unit  
**Applicant:** Nokia Solutions and Networks  
**Test Date:** Oct. 21 ~ Oct. 23, 2019  
**Standards:** FCC Part 2 (Section 2.1091)  
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:** Oct. 24, 2019  
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen, **Date:** Oct. 24, 2019  
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 <sup>2</sup> )	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

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

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

#### For General Population

The antenna of this product, under normal use condition, is at least 174cm 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 78cm away from the body of the user. So, this device is classified as **fixed device**.

### 2.4 Antenna Gain

Antenna Spec.	Direction Panel antenna with 12.5dBi gain
Antenna Model	NA
Antenna Gain	12.5dBi

Note:

1. This device operate with Multiple Antennas Using Multiple-input, Multiple-output (MIMO) Technology for uncorrelated Transmission. Base on NOKIA's declaration that the maximum permissible directional gain is 12.5dBi.
2. Representative antenna used for evaluation is AAFA at 12.5dBi.

### 3 Calculation Result of Maximum Tune up Power

#### For General Population

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
n25	1940.0~1985.0	55.78	174	0.995	1

#### For Occupational Population

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
n25	1940.0~1985.0	55.78	78	4.950	5

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
n25	78	174

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