

RF Exposure Report

Report No.: SA181221C07

FCC ID: VBNAHFB-01

Test Model: AHFB

Received Date: Dec. 21, 2018

Test Date: Dec. 26, 2018 ~ Jan. 26, 2019
Aug. 01 ~ Aug. 12, 2019

Issued Date: Aug. 14, 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

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(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 / 788550 / TW0003
Designation Number:



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Release Control Record

| Issue No. | Description | Date Issued |
|-------------|------------------|---------------|
| SA181221C07 | Original release | Aug. 14, 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: Dec. 26, 2018 ~ Jan. 26, 2019
Aug. 01 ~ Aug. 12, 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:** Aug. 14, 2019
Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Aug. 14, 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 ²) | 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/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 278cm 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 124cm 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 16.4dBi gain |
| Antenna Model | NA |
| Antenna Gain | 16.4dBi |

3 Calculation Result of Maximum Tune up Power

For General Population

Single Carrier: Module Model: WNCEL-30905

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|---------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA Band 25 | 1932.4~1992.6 | 59.55 | 278 | 0.928 | 1 |

Single Carrier: Module Model: WNCEL-30906

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|---------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA Band 25 | 1932.4~1992.6 | 59.47 | 278 | 0.911 | 1 |

Multi Carrier:

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|---------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA Band 25 | 1932.4~1992.6 | 55.62 | 278 | 0.376 | 1 |

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|-----------------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA+ LTE Band 25 | 1932.4~1992.6 | 59.84 | 278 | 0.992 | 1 |

For Occupational Population

Single Carrier: Module Model: WNCEL-30905

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|---------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA Band 25 | 1932.4~1992.6 | 59.55 | 124 | 4.666 | 5 |

Single Carrier: Module Model: WNCEL-30906

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|---------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA Band 25 | 1932.4~1992.6 | 59.47 | 124 | 4.581 | 5 |

Multi Carrier:

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|---------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA Band 25 | 1932.4~1992.6 | 55.62 | 124 | 1.888 | 5 |

| Function | Frequency Band (MHz) | EIRP (dBm) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|-----------------------|----------------------|------------|---------------|-------------------------------------|-----------------------------|
| WCDMA+ LTE Band 25 | 1932.4~1992.6 | 59.84 | 124 | 4.988 | 5 |

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 |
| WCDMA only | 124 | 278 |
| WCDMA Band 25 / WCDMA+ LTE Band 25 | 124 | 278 |

---END---