



FCC RF EXPOSURE REPORT

For

ASOF

MODEL NUMBER: 476148A

ADDITIONAL MODEL NUMBER: 476147A

PROJECT NUMBER: 4790799929

REPORT NUMBER: 4790799929-3

FCC ID: 2AD8UASOFWIFI-01

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Prepared for

FCC: Nokia Solutions and Networks, OY

Prepared by

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V0	07/06/2023	Initial Issue	

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1. APPLICANT INFORMATION

Applicant Information

FCC Company Name: Nokia Solutions and Networks, OY
FCC Company Address: 2000 W. Lucent Lane Naperville Illinois 60563 United States

EUT Description

Product Name: ASOF
Model Name: 476148A
Additional No.: 476147A
Model Difference: The two models are identical except the power supply unit, the power supply unit of model 476148A is an AC power supply unit, the power supply unit of 476147A is a DC power supply unit.
Sample Number: 5992994
Data of Receipt Sample: Apr. 17, 2023
Test Date: Apr. 17, 2023~ Jul. 05, 2023

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Guidelines for Human Exposure IEEE C95.1	Complies

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 447498 D01 General RF Exposure Guidance v06 and FCC Guidelines for Human Exposure IEEE C95.1.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4829.01) UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1247) UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</p> <p>IC (IC Designation No.: 25056; CAB No.: CN0073) UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China.

Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS.

Note 3: The test anechoic chamber in UL-CCIC COMPANY LIMITED had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

4. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Output Power to Antenna	3.1 dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

5. REQUIREMENT

LIMIT

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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

Note 1: f = frequency in MHz, * means Plane-wave equivalent power density

Note 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Note 3: The limit value 1.0mW/cm² is available for this EUT.

MPE CALCULATION METHOD

$$S = PG/(4\pi R^2)$$

where: S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

CALCULATED RESULTS

WIFI 2.4G (Worst case)						
Operating Mode	Output Power with tolerance		Antenna Gain		Power density (mW/cm ²)	Limit
	(dBm)	(mW)	(dBi)	(num)		
802.11b	21.0	125.89	3.03	2.01	0.05	1
802.11g	17.0	50.12	3.03	2.01	0.02	1
802.11n20	17.0	50.12	3.03	2.01	0.02	1

WIFI 5G (Worst case)						
Operating Mode	Output Power with tolerance		Antenna Gain		Power density (mW/ cm ²)	Limit
	(dBm)	(mW)	(dBi)	(num)		
802.11a	16.5	44.67	4.55	2.85	0.03	1
802.11n20	14.0	25.12	4.55	2.85	0.01	1
802.11n40	12.5	17.78	4.55	2.85	0.01	1
802.11ac20	14.0	25.12	4.55	2.85	0.01	1
802.11ac40	12.5	17.78	4.55	2.85	0.01	1
802.11ac80	13.5	22.39	4.55	2.85	0.01	1

Note:

1. The power density of 2.4GHz WIFI + the power density of 5GHz WIFI = 0.08 which is less than the limit, so the calculations of above situations are less than the limit
2. The output power to antenna and antenna gain are from report operation description.
3. The minimum separation distance of the device is greater than 20 cm.
4. All the modes and channels had been tested, but only the worst data was recorded in the report.
5. The calculated result for the sample received is <Pass> according to < 47 CFR FCC Part 2 Subpart J, section 2.1091> when <Accuracy Method> decision rule is applied.

END OF REPORT