TEST REPORT

Report Number: 15556059-E2V1

Applicant	:	NOKIA CANADA INC. 600 MARCH RD OTTAWA, ON K2K 2T6, CANADA
Model	:	Nokia 7705 SAR-Hmc
FCC ID	:	AS57705SARHMC-3
EUT Description	:	REMOTE RADIO BASE STATION
Test Standard(s)	:	FCC PART 1 SUBPART I AND PART 2 SUBPART J

Date Of Issue:
2025-03-03

Prepared by:
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ACCREDITED
CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-03-03	Initial Issue	---

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1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	NOKIA CANADA INC. 600 MARCH RD OTTAWA, ON K2K 2T6, CANADA
Model	Nokia 7705 SAR-Hmc
FCC ID	AS57705SARHMC-3
EUT Description	REMOTE RADIO BASE STATION
Applicable Standards	FCC PART 1 SUBPART I AND PART 2 SUBPART J
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc will constitute fraud and shall nullify the document.

Approved & Released By:	Prepared By:
	
Dan Coronia Operations Leader UL Verification Services Inc.	Kiya Kedida Lead Project Engineer UL Verification Services Inc

2. TEST METHODOLOGY

All calculations were made in accordance with FCC OET Bulletin 65 Edition 97-01.

3. REFERENCES

All transmit characteristics used in evaluations were

- Documented in the UL Verification Services Inc. document 15556059 WWAN Report and Antenna Gain exhibit.

Output power and Duty cycle is excerpted from the RF reports.

Maximum declared output power and antenna gain data are provided by the customer.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a remote radio base station.

6. MAXIMUM PERMISSIBLE RF EXPOSURE

6.1. FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Notes:

(1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

(2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who 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

6.2. EQUATIONS

POWER DENSITY

Power density is given by:

S = EIRP / (4 * Pi * D^2)

Where

S = Power density in mW/cm^2
EIRP = Equivalent Isotropic Radiated Power in mW
D = Separation distance in cm

Power density in units of mW/cm^2 is converted to units of W/m^2 by multiplying by 10.

DISTANCE

Distance is given by:

D = SQRT (EIRP / (4 * Pi * S))

Where

D = Separation distance in cm
EIRP = Equivalent Isotropic Radiated Power in mW
S = Power density in mW/cm^2

SOURCE-BASED DUTY CYCLE

Where applicable (for example, multi-slot cell phone applications) a duty cycle factor may be applied.

Source-based time-averaged EIRP = (DC / 100) * EIRP

Where

DC = Duty Cycle in %, as applicable
EIRP = Equivalent Isotropic Radiated Power in W

MIMO AND COLOCATED TRANSMITTERS (IDENTICAL LIMIT FOR ALL TRANSMITTERS)

For multiple chain devices, and colocated transmitters operating simultaneously in frequency bands where the limit is identical, the total power density is calculated using the total EIRP obtained by summing the EIRP (in linear units) of each transmitter.

Total EIRP = (EIRP1) + (EIRP2) + ... + (EIRPn)

where

EIRPx = Source-based time-averaged EIRP of chain x or transmitter x

The total EIRP is then used to calculate the Power Density or the Distance as applicable.

MIMO AND COLOCATED TRANSMITTERS

For multiple colocated transmitters operating simultaneously in frequency bands where different limits apply:

The Power Density at the specified separation distance is calculated for each transmitter chain or transmitter.

The fraction of the exposure limit is calculated for each chain or transmitter as
(Power Density of chain or transmitter) / (Limit applicable to that chain or transmitter).

The fractions are summed.

Compliance is established if the sum of the fractions is less than or equal to one.

7. RF EXPOSURE RESULTS

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations of power density at a separation distance of 20cm.

Band	Mode	Frequency (MHz)	Average Power (dBm)	Antenna Gain (dBi)	Duty Cycle %	EIRP (average) mW	Separation Distance (cm)	FCC Power Density (mW/cm^2)	FCC Limit (mW/cm^2)	FCC Limit (%)
Band 48	LTE	3600	22.0	7.0	100%	794	20	0.158	1.00	15.8%

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations of power density at a separation distance of 57cm.

Band	Mode	Frequency (MHz)	Average Power (dBm)	Antenna Gain (dBi)	Duty Cycle %	EIRP (average) mW	Separation Distance (cm)	FCC Power Density (mW/cm^2)	FCC Limit (mW/cm^2)	FCC Limit (%)
Band 48	LTE	3600	22.0	24.0	100%	39811	57	0.975	1.00	97.5%

Notes:

1) For MPE KDB 447498 requires the calculations to use the maximum rated power; that power should be declared by the manufacturer and should not be lower than the measured power. Powers used are the maximum rated powers as declared by the manufacturer.
2) The output power in the tables above is the maximum power per chain among various channels and various modes within the specific band.
3) The antenna gain in the tables above is the maximum antenna gain among various channels within the specified band.
4) Duty cycle for 4G bands is set to 100% to provide a conservative analysis rather than using the actual maximum duty cycle.
5) Calculation of power density uses the maximum power and maximum antenna gain across all supported antennas for each band to provide a conservative and simplified assessment.

END OF REPORT