

**Exhibit 3 FCC REQUIRED INFORMATION**

The following information is presented in the content and format requested by the FCC:

**Section 2.1033 (c)(1):**

The full name and mailing address of the manufacturer of the device and the applicant for certification

Manufacturer: **Nokia Solutions and Networks, OY**  
2000 Lucent Lane  
Naperville, Illinois 60563  
Attention: Terry P. Schwenk

Applicant: **Nokia Solutions and Networks, OY**  
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**Section 2.1033(c)(2): FCC Identifier: 2AD8UAWGUCD01**

**Section 2.1033(c)(4):**Type or types of emission: **97M5G7W,**  
**198MG7W – (a two carrier aggregate of 97M5G7W)**  
**498MG7W – (a five carrier aggregate of 97M5G7W)**

This Transceiver System supports the **3GPP 5G New Radio** and other LTE technologies. The subject of this certification request is for operation using the **3GPP 5G New Radio** modulation format in QPSK, 16QAM and 64QAM (LTE-TDD) for one to seven carriers. The transceiver can be configured for the various transmit configurations by varying the digital information provided from the baseband channel electronics alone without physical, hardware or circuit changes to the transceiver.

**Section 2.1033(c)(5):** Frequency range, Transmit / Receive: **24.25-24.45 GHz and 24.75-25.25 GHz**

**Section 2.1033(c)(6):** Range of operating power values or specific operating power levels, and description of any means provided for variation of operating power.

**Response:**

The Nokia **AWGUC/D AirScale mmWave 2T2R n258 60dBm EIRP, FCC ID: 2AD8UAWGUCD01** is capable of producing two 57 dBm EIRP transmit beams (horizontally and vertically polarized) for a total transmit power of 60 dBm EIRP. Each of the beams can be configured to provide one to seven carriers of **97M5G7W** emissions designator in the **Upper Microwave Flexible Use Service** spectrum (24.25 – 25.25 GHz) as allowed under **47CFR Part 30**. The operational parameters are one or two 97M5G7W carriers in the 24.25-24.45 GHz portion of the US n258 spectrum and one to five 97M5G7W carriers in the 24.75 – 25.25 GHz portion of the spectrum.

The total RF power will be divided among the one to seven carriers anywhere in the two portions of the spectrum. Thus, any carrier configuration can provide up to the specified power of 57 dBm EIRP per polarization for a total combined power of 60 dBm EIRP

RF Power control of the **AWGUC/D** transceiver is accomplished via software control of the data stream and the RF power gain. The software controls the RF power gain through the RF transmit path with a Digital Step Attenuator (DSA) to maintain the correct RF power of the **AWGUC/D** over frequency and temperature. The DSA gain control has a resolution of 0.25 dB per step and an overall range of 11 dB. Separate circuitry is provided to inhibit the carrier output if a synthesizer in the transmit path loses lock.

**Exhibit 3 FCC REQUIRED INFORMATION *continued***

**Section 2.1033(c)(7):** Maximum power rating as defined in the applicable part (s) of the rules.

**Response:**

This product can produce two individual 57dBm EIRP beams (501 W EIRP each).

The sum of these two 57 dBm EIRP beams results in the Maximum Total Power of 60 dBm EIRP (1000W EIRP)

The maximum continuous RF output power available is the sum of the horizontal and vertical transmit beams generated by individual 16x12 antenna assemblies. There are no antenna connections. Each antenna assembly distributes 31 dBm of RF power with an overall gain of 26 dBi. This results in a radiated power of 57dBm EIRP per antenna assembly for a Total Radiated Power of 60dBm EIRP

**Section 2.1033 (c)(10):** A description of all circuitry and devices for determining and stabilizing frequency.

**Response:**

The Nokia **AWGUC/D AirScale mmWave 2T2R n258 60dBm EIRP, FCC ID: 2AD8UAWGUCD01** is a 1400 MHz instantaneous bandwidth digital transceiver designed to operate in the **Part 30 Upper Microwave Flexible Use Service** spectrum. The FPGA to A/D transceiver in this product is designed to utilize 50 and 100 MHz carrier emission bandwidth **5G-NR** signals which are up-converted to the overall n258 24.25-25.25 GHz Band. The frequency stability of the **5G-NR** carrier frequency is maintained with an accuracy better than the rated  $\pm 0.05$  ppm by reference frequency locking the phase-locked-loop (PLL) circuitry to a stable internal reference oscillator. External reference timing is provided by locking to an external frequency disciplined reference signals. Separate circuitry is provided to inhibit the carrier output if a synthesizer in the transmit path loses lock

The **AWGUC/D AirScale mmWave 2T2R n258 60dBm EIRP** is supplied its frequency discipline synchronization for reference from the baseband information source which is GPS capable.