

**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 US LLC 6000 Connection Drive Irving, TX, 75039 Attention: Steve Mitchell
Applicant:	Nokia Solutions and Networks US LLC 6000 Connection Drive Irving, TX, 75039 Attention: Steve Mitchell Phone: (972)374-3000 email: <a href="mailto:steve.mitchell@nokia.com">steve.mitchell@nokia.com</a>

**Section 2.1033(c)(2): FCC Identifier: VBNAAHJ-01**

**Section 2.1033(c)(4):**Type or types of emission: **10M0F9W and / or 20M0F9W LTE Multicarrier**  
**40M0G7W 5G-New Radio Added**

This Transceiver System originally supported the **3GPP 5G LTE** technologies modulation format in QPSK, 16QAM 64QAM and 256QAM (LTE-TDD) for one to three LTE carriers. The subject of this certification request is for operation using the 5G-NR modulation format in QPSK, 16QAM 64QAM and 256QAM (LTE-TDD). The transceiver was configured for the new 5G-NR transmit configurations by varying the digital information provided from the baseband channel electronics. There were no physical, hardware or circuit changes to the transceiver.

**Section 2.1033(c)(5):** Frequency range, Transmit / Receive : **2590-2690 MHz**

**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 **AirScale MAA 64T64R 128AE B41 120W AAHJ (AAHJ) FCC ID: VBNAAHJ-01** has 64 transmit/receive outputs. Each output can produce 1 to 3 RF carriers. Each 20 MHz of carrier bandwidth has a maximum power of 28 dBm for a total of 33 dBm per port. This results in a total output power of 120 Watts for 60 MHz of bandwidth for all ports. For a 40 MHz 5G-NR carrier the maximum power is 31 dBm which results in a total output power of 80W for all ports. There is no change to the products output power from the original filing..

RF Power control of the AAHJ 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 AAHJ over frequency and temperature range. The DSA gain control has a resolution of 1 dB per step and an overall range of 10 dB.

Separate circuitry is provided to inhibit the carrier output if a synthesizer in the transmit path loses lock. There has been no change to the products performance in this regard.

**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:**

The AAHJ maximum total RF output power is 120 Watts which is the sum of all of its 64T/64R transmit ports. The original 120 W is the total power for 3x20MHz carriers (i.e. 60 MHz of Bandwidth.)

For a 40 MHz 5G-NR carrier the total power is 80 Watts

There is no change to the products maximum total RF output power.

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

**Response:**

The subject of this application is designed to operate in the B41 frequency band. It supports CPRI timing reference signals to regulate internal timing including the RF frequency accuracy. All of the timing reference signals (frequency and phase alignment) and baseband signals are generated in the GPS capable baseband unit and provided to the radio through CPRI interface.

The carrier frequency is determined by the direct up-conversion of digital baseband signals to radio frequencies. Frequency stability of the carrier frequency is achieved with accuracy better than  $\pm 0.05$  ppm by phase locking the internal frequency synthesizers to reference timing signals. The frequency accuracy on the system clock for frequency synchronization is maintained by disciplining the master oscillator output with an available external reference source.

There has been no change to the products performance in this regard