



Bell Labs

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FCC Authorized Telecommunication
Certification Body
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May 26, 2023

Subject: Application for Original Equipment Certification under FCC ID: VBNAHCF-01 for AHCF AirScale RRH 4T4R B5 200W.

Dear Examiner:

The Nokia AHCF AirScale RRH 4T4R B5 200W (RRH) (hereinafter referred to as "AHCF") is a higher power RRH operating under the regulations of FCC Part 22 - Cellular Telephone Systems Operating in Band 5, 869-894 MHz. The AHCF supports 5G-NR and Long Term Evolution - Frequency Division Duplex (LTE FDD) technology, 4 MIMO ports configured for 2x60W + 2x40W or 4x40 MIMO. The AHCF also supports single and multiple carriers, with combinations of LTE + NB-IoT (Guardband and Inband), NB-IoT Standalone, and 5G-NR, as well as single and multiple carrier operations.

Testing was done in June 2020 for LTE and August 2021 for 5G-NR, however, there are no changes to the design since then.

LTE and 5G-NR carrier configurations are as follows:

- 200kHz – Standalone NB-IoT
- 1.4 MHz – Single LTE carrier
- 3 MHz – Single LTE carrier
- 5 MHz – Single LTE carrier, 5 MHz LTE + NB-IoT Standalone, 5+5 MHz LTE + NB-IoT Standalone
- 10 MHz – Single LTE carrier, 10 MHz LTE with NB-IoT Inband or NB-IoT Guardband
- 5 MHz – Single 5G-NR carrier
- 10 MHz – Single 5G-NR carrier

RF Conducted testing was performed at the antenna port for two power levels 60W (TX1 and TX3) and at 40W (TX2 and TX4) for all four ports.

The key data are summarized below.

FCC ID:	VBNAHCF-01
FCC Rules:	Part 22
Frequency Range:	E-UTRAN Bands 5, 869-894 MHz
Conducted Output Power:	Up to 47.8 dBm (200W Total)
Frequency Tolerance:	± 0.05 ppm
LTE Emissions Designators	194KF9W, 1M10F9W, 2M70F9W, 4M47F9W, 9M42F9W

5G-NR Emissions Designators

4M49W7W, 9M27W7W

Carriers:

Single 5G-NR Carriers: 5 and 10 MHz

Single LTE Carriers: 200kHz NB-IoT, 1.4, 3, 5 and 10 MHz

Multiple 5G-NR Carriers: 5+5, 10+5, 10+10 MHz

Multiple LTE Carriers: 10+10 MHz

Enclosed in this application package are FCC 731 Form, letters of Request for Permanent Confidentiality, agent authorization letter, the required measurement data, and other required exhibits specific to this request for authorization of the subject product. The measurement exhibits attached to this application demonstrate full compliance with FCC Part 22 following the procedural requirements specified in FCC Part 2 Subpart J – Equipment Authorization Procedures. The supporting exhibits are assembled and presented in accordance with the *Table of Contents* attached below.

Should there be any questions or procedural issues please feel free to contact me by email and/or phone.

Sincerely,



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Agent Authorization Letter

Attestation Statements Part 2.911(d)(5)(i)(ii) Filing

Attestation Statements Part 2.911(d)(7) Filing

Required Exhibits:

Exhibit Number	FCC Rule Number	Description
1	Section 2.1033(a), 2.911(d)	FCC Form 731
2	Section 2.911(e)	Qualifications and Certifications
3	Section 2.1033(c) (1,5,7-10)	Manufacturers, FCC Identifier, Emission, Range of RF Power & Frequency
4	Section 2.1033(c)(14), 2.925(a)(1)	Drawing of the Identification Label
5	Section 2.1033(c)(11,12,13,16)	Active Device - Tune-Up procedure - Modulation System-Operational Description (Confidential)
6	Section 2.1033(c)(13)	Block Diagram (Confidential)
7	Section 2.1033(c)(13)	Complete Circuit Diagrams (Confidential)
8	Section 2.1033(c)(6)	Installation Manual (Confidential)
8a	Section 2.1033(c)(6)	Manual - NDA (Non-Disclosure Agreement)
9	Section 2.1033(c)(15)	Internal Photographs of the Equipment (Confidential)
10	Section 2.1033(c)(15)	External Photographs of the Equipment
11	Section 2.1033(c)(24)	Photographs of the Test Setups
12	Sections 2.1033(f), 1.1307 & 1.1310	RF Exposure Assessment (MPE Report)
13	Section 2.1033(c)(13)	Parts List (Confidential)