



Timco Engineering Inc.
FCC Authorized Telecommunications
Certification Body (TCB)

Nokia, Global Product Compliance Laboratory
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Murray Hill, New Jersey 07974-0636 USA

January 14, 2019

Timco Engineering Inc.
FCC Authorized Telecommunication Certification Body
849 N.W. State Road 45, P.O. Box 370 Newberry,
Florida 32669

Dear Examiner:

The Nokia **AHNA AirScale RRH 4T4R B30 100W (AHNA)** is the subject of this request for a new FCC Product Certification under **FCC ID: VBNAHNA-01**. The **AHNA** is a 10 MHz bandwidth LTE / New Radio Transceiver with a total power output capability of 50 dBm (100W). It operates as a 4x4 MIMO transmitter in the **Part 27 MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES** spectrum utilizing **LTE-FDD** technology. Nokia Bell Labs, part of the Nokia family of companies, hereby requests certification for single carrier operation with 5 MHz and 10 MHz Bandwidths. This is a new design and all of the required supporting exhibits are attached.

The AHNA is a LTE-FDD (Long Term Evolution-Frequency Division Duplex) transceiver and operates in Band 30 Broadband Radio Service (BRS) spectrum (2350 - 2360 MHz). The AHNA currently supports 5 MHz and 10 MHz carriers and 4x4 MIMO operation with a maximum total RF output power of 100W at its 4T/4R transmit ports.

The measurement exhibits attached to this application demonstrate full compliance with FCC Part 27 following the procedural requirements specified in FCC Part 2 Subpart J – Equipment Authorization Procedures.

The data, summarized below, is in the form presently used by the Commission's Radio Equipment List.

Equipment Identification:	VBNAHNA-01
Rules Part Number:	Part 27
Emissions Designator(s):	4M50F9W, 8M92F9W
Frequency Range:	Transmit/ Receive: 2350 – 2360/2305 – 2315 MHz
Output Power:	100W total with 4x4 MIMO Configuration
Frequency Tolerance:	± 0.05 ppm
Carriers	5 MHz and 10 MHz Single carriers

Enclosed in this application package are FCC 731 Form, 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 27 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.

List of Confidential Exhibits

<u>Exhibit #</u>	<u>FCC Rule Section</u>	<u>Exhibit Title</u>
Exhibit 5	Section 2.1033(c)(8,9)	Active Circuit Devices Drive Levels, Tune-Up procedure
Exhibit 6	Section 2.1033(c)(10,13)	Block Diagram, Operational Description, Circuitry for determining frequency)
Exhibit 7	Section 2.1033(c)(10)	Complete Circuit Diagrams)
Exhibit 8	Section 2.1033(c)(12,3)	Instruction Book (Installation Manual or User Manual)
Exhibit 9	Section 2.1033(c)(12)	Internal Photographs of the Equipment

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

Filing Engineer



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Att. Table of Contents for the Nokia **AHNA AirScale RRH 4T4R B30 100W (AHNA)** Product Certification Report

TABLE OF CONTENTS

Cover Letter

Request for Confidentiality

Exhibit

<u>Number</u>	<u>FCC Rule Number</u>	<u>Description</u>
1	Section 2.1033(a)	FCC Form 731
2	Section 2.911(d)	Qualifications and Certifications
3	Section 2.1033(c)(1,2, 4-7)	Manufacturers, FCC Identifier, Emission, Range of RF Power & Frequency
4	Section 2.1033(c)(11)	Drawing of the Identification Label
5	Section 2.1033(c)(8,9)	Active Circuit Devices Drive Levels, Tune-Up procedure (Confidential)
6	Section 2.1033(c)(10,13)	Block Diagram, Operational Description, Circuitry for determining frequency (Confidential)
7	Section 2.1033(c)(10)	Complete Circuit Diagrams (Confidential)
8	Section 2.1033(c)(12,3)	Instruction Book (Installation Manual or User Manual) (Confidential)
9	Section 2.1033(c)(12)	Internal Photographs of the Equipment (Confidential)
10	Section 2.1033(c)(12)	External Photographs of the Equipment
11	Section 2.1033(c)(10, 13)	Description of Modulation System
12	Section 2.1033(c)(14)	Test Report
13	Sections 1.1307 & 1.1310	RF Exposure Assessment