NOKIA Bell Labs

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

Nokia, Global Product Compliance Laboratory
600-700 Mountain Avenue
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August 2, 2019

Bruno Clavier- General Manager
Timco Engineering Inc.
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Newberry, Florida 32669

Dear Mr. Clavier
The Nokia **AirScale 39 GHz Radio Unit (AEWB)** is the subject of this request for a new FCC Product Certification under **FCC ID: 2AD8UAEWB01.** The **AEWB** is an 800 MHz bandwidth LTE / New Radio Transceiver with a total power output capability of 54 dBm EIRP per polarization for a total combined power of 57 dBm EIRP. It operates as a 2x2 MIMO transmitter in the **Part 30 Upper Microwave Flexible Use Service** spectrum utilizing **5G New Radio (NR)** technology. Nokia Bell Labs, part of the Nokia family of companies, hereby requests certification for Multicarrier operation utilizing this **5G New Radio** OFDM based air interface. This is a new design and all of the required supporting exhibits are attached.

This application is for certification under Part 30 in the 37.0 – 40.0 GHz portion of the Upper Microwave Flexible Use Service spectrum. The **AEWB AirScale 39 GHz Radio Unit** implements two 16x16 active element phased array transmit modules to provide 2x2 MIMO operation using **97M5G7W** emissions designators in the **Upper Microwave Flexible Use Service** spectrum (37.0 – 40.0 GHz) as allowed under **47CFR Part 30**.

The measurement exhibits attached to this application demonstrate full compliance with FCC Part 30 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:	**2AD8UAEWB01**
Rules Part Number:	**Part 30**
Emissions Designators:	**97M5G7W and 398MG7W (5G-NR) (LTE-TDD Based)**
Frequency Range:	**Transmit/ Receive: 37.0– 40.0 GHz**
Output Power:	**54 dBm EIRP per polarization, 57 dBm EIRP Total Output for 2 polarizations operating in a 2x2 MIMO configuration** **One through Four Carrier Operation**
Frequency Tolerance:	**± 0.05 ppm**

Attached are the FCC Form 731 (Application for Equipment Authorization – Radio Frequency Devices), the required measurement data and exhibits specific to this request for authorization of the **AirScale 39 GHz Radio Unit (AEWB)**. This request also authorizes TIMCO Engineering Inc. to submit a **KDB PAG** request to the FCC to process this filing. The technical or non-technical contact at Nokia Bell Labs will comply with any request for additional information should the need arise. The attached exhibits with the applicable FCC Rule section are assembled and presented in accordance with the *Table of Contents* attachment. Included is a formal letter requesting confidentiality for the following exhibits:

List of Confidential Exhibits

Exhibit #	FCC Rule Section	Exhibit Title
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 Users 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,



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Att. Table of Contents for the **AirScale 39 GHz Radio Unit (AEWB)** Product Certification Report

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Request for Confidentiality

Exhibit

Number	FCC Rule Number	Description	
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 Users 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)(21)	Photographs of the Test Setups	

Test Report

Section Number	FCC Rule Number	Description of Test Report Exhibits
4	Section 2.1033(c)(14)	Listing of Required Measurements
4.1	Section 2.1046	Measurement of Radio Frequency Power Output
4.2	Section 2.1047	Measurement of Modulation Characteristics
4.3	Section 2.1049	Measurement of Occupied Bandwidth and Edge of Band Emissions
4.4	Section 2.1051	Measurement of Spurious Emissions at Antenna
4.5	Section 2.1053	Field Strength of Spurious Radiation
4.6	Section 2.1055	Measurement of Frequency Stability
4.7	Section 2.1041(b)	List of Test Equipment
4.8	Section 2.1033(c)(21)	Photographs of the Test Setups
4.9		Facilities and Accreditation
5.0		Appendix A Calibration Certificates