

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

Nokia, Global Product Compliance Laboratory
600-700 Mountain Avenue
Room 5B-108
Murray Hill, New Jersey 07974-0636 USA

May 1, 2020

Bruno Clavier- General Manager
Timco Engineering Inc.
849 N.W. State Road 45
P.O. Box 370
Newberry, Florida 32669

Dear Mr. Clavier

The Nokia **AirScale 39 GHz Radio Units (AEWD + AEWE)** are the subject of this request for a Class II Permissive Change to their FCC Product Certification under **FCC ID: 2AD8UAEWDAEWE01**. The Radio Base Unit **AEWD** and its Extension Module **AEWE** are an 800 MHz bandwidth LTE / New Radio Transceiver and were originally certified for operation for 1-4 carriers with a total power output capability of 48 dBm EIRP per polarization for a total combined power of 51 dBm EIRP.

Nokia Bell Labs, part of the Nokia family of companies, hereby requests certification for Multicarrier operation with up to eight carriers. utilizing this **5G New Radio** OFDM based air interface. The design is unchanged from the original filing 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 **AEWD + AEWE AirScale 39 GHz Radio Units** implements four dual 8x8 active element phased array transmit modules to provide 2x2 MIMO operation using **98M0G7W** 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:	2AD8UAEWDAEWE01
Rules Part Number:	Part 30
Emissions Designators:	98M0G7W and 398MG7W (5G-NR) (LTE-TDD Based)
Frequency Range:	Transmit/ Receive: 37.0– 40.0 GHz
Output Power:	48 dBm EIRP per polarization, 51 dBm EIRP Total Output for 2 polarizations operating in a 2x2 MIMO configuration
	Five through Eight 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 (AEWD + AEWE)**. 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.

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



Raymond J. Johnson
Technical Manager
FCC Compliance Test Group
Nokia, Global Product Compliance Laboratory
Phone: +1 908 679 6220
email: ray.johnson@nokia-bell-labs.com

Primary Administrative Contact

Raymond J. Johnson
Technical Manager
FCC Compliance Test Group
Nokia, Global Product Compliance Laboratory
Building 5A-127
600 Mountain Avenue
Murray Hill, NJ 07974
Phone: +1 908 679 6220
email: ray.johnson@nokia-bell-labs.com

Filing Engineer

W. Steve Majkowski NCE
Filing Lead Engineer
Nokia, Global Product Compliance Laboratory
Building 5B-103
600 Mountain Avenue
Murray Hill, NJ 07974
Phone +1 908 608-8004
email: steve.majkowski@nokia-bell-labs.com

Att. Table of Contents for the AEWD and AEWE **AirScale 39 GHz Radio Unit** 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
12	Section 2.1033(c)(21)	Photographs of the Test Setups

Test Report

Section

<u>Number</u>	<u>FCC Rule Number</u>	<u>Description of Test Report Exhibits</u>
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