

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

August 12, 2021

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

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 FA3WA AirScale mmWave Extension Module 5G n260 39 GHz** is the subject of this request for an initial Product Certification under FCC ID: **2AD8UFA3WA01**. The **FA3WA AirScale mmWave Extension Module 5G n260 39 GHz** is part of our ASMR family of products. The typical ASMR configuration is composed of an ASMR base unit and up to two extension modules. The previously filed Radio Base Unit, FCC ID: **2AD8UAWEWAB01**, can be paired with two **FA3WA** Extension Modules to provide 360 degree coverage.

Currently the FA3WA Extension Modules is paired with an ASMR base unit operating in the identical UMFUS n260 39 GHz band. To support market needs it may eventually be paired with an ASMR base unit operating in a different UMFUS band (24 GHz or 28 GHz) to form a dual band coverage transceiver system. A Class II change will be processed at that time to document the specific dual band coverage configurations and requirements in a separate report.

The **FA3WA AirScale mmWave Extension Module** incorporates an identical mmWave 5G LTE / New Radio Transceiver module as the same band ASMR Base unit. The 39 GHz transceiver modules implement two individually polarized 8x12 active element phased arrays. These 1400 MHz instantaneous downlink bandwidth units have a total power output capability of 52 dBm EIRP per polarization for a total combined power of 55 dBm EIRP. It can be configured to provide one to eight carriers of **97M0G7W** emissions designator in the **Upper Microwave Flexible Use Service** spectrum (37 – 40 GHz) as allowed under **47CFR Part 30**. The operational parameters allows the unit to place up to eight carriers anywhere within a 1400 MHz portion of the US n260 spectrum. The total RF power will be divided among the one to eight carriers. Thus, any carrier configuration can provide up to the specified power of 52 dBm EIRP per polarization for a total combined power of 55 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 required hardware design information and all of the required supporting exhibits are attached.

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.

<b>Equipment Identification:</b>	<b>2AD8UFA3WA01</b>
<b>Rules Part Number:</b>	<b>Part 30</b>
<b>Emissions Designators:</b>	<b>97M0G7W, 497MG7W and 797MG7W (5G-NR LTE-TDD Based)</b>
<b>Frequency Range:</b>	<b>Transmit/ Receive: 37 – 40 GHz</b>
<b>Output Power:</b>	<b>52 dBm EIRP per polarization, 55 dBm EIRP Total Output for 2 polarizations operating in a 2x2 MIMO configuration</b>
	<b>One through Eight Carrier MIMO Operation</b>
<b>Frequency Tolerance:</b>	<b>± 0.05 ppm</b>

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 **FA3WA AirScale 5G n260 39 GHz mmWave Extension Module**. This request also authorizes TIMCO Engineering Inc. to submit a **KDB PAG** request for processing of 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,



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Att. Table of Contents for the **FA3WA AirScale 5G ASMR 2T2R 192AE n260 39G mmWave Extension Module** Product Certification

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**Cover Letter**

**Permanent Confidentiality Request Letter**

**Agent Authorization Letter**

**Exhibit NDA- - Non Disclosure Agreement (Confidential) -**

**Exhibit**

<b>Number</b>	<b>FCC Rule Number</b>	<b>Description</b>	
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	(Confidential)
7	Section 2.1033(c)(10,13)	Operational Description, Circuitry for Determining Frequency	(Confidential)
8	Section 2.1033(c)(10)	Complete Circuit Diagrams	(Confidential)
9	Section 2.1033(c)(12,3)	Instruction Book FA3WA (Installation Manual or User's Manual)	(Confidential)
10	Section 2.1033(c)(12,3)	Instruction Book AWEWA/B (Installation Manual or User's Manual)	(Confidential)
11	Section 2.1033(c)(12)	Internal Photographs of the Equipment	(Confidential)
12	Section 2.1033(c)(12)	External Photographs of the Equipment	
13	Section 2.1033(c)(10, 13)	Description of Modulation System,	
14	Section 2.1033(c)(21)	Photographs of the Test Setups	

**Test Report**

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**Section**

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