

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

Nokia, Global Product Compliance Laboratory
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June 3, 2022

Bruno Clavier- General Manager
Timco Engineering Inc.
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P.O. Box 370
Newberry, Florida 32669

Dear Mr. Clavier

The Nokia **FA3UB AirScale mmWave Radio Extension Unit** is the subject of this request for a Product Certification under **FCC ID: 2AD8UFA3UB01**.

The **FA3UB** was part of the certification of the **FA3UB 5G AirScale 24 GHz mmWave Radio** under **FCC ID: 2AD8UASMR24FA3UB**. In that configuration the base unit and extension modules operate one at a time to provide 360 degree coverage. This Product Certification is to independently assign the **FA3UB AirScale mmWave Radio Extension Unit** its own individual FCC ID so that it may be configured with any ASMR Base units. This filing documents operation with ASMR 24GHz Base units. Future Class II Changes will document operation with other band ASMR Units.

The **FA3UB and AWEUC/D 5G AirScale 24 GHz mmWave Radio 2T2R 128AE n258 24G** are part of our **ASMR** family of products. This system is composed of a base unit and up to two extension modules. The Radio Base Unit, an **AWEUC** (AC version) or an **AWEUD** (DC version) are paired with **FA3UB** Extension Modules to form a 360 degree coverage transceiver system. The 24GHz Base and Extension Modules incorporate identical mmWave 5G LTE / New Radio Transceiver modules. The transceiver modules implement dual 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 seven carriers of **97M5G7W** emissions designator in the in the **Upper Microwave Flexible Use Service** spectrum (24.25 – 25.25 GHz) as allowed under **47CFR Part 30**. The US n258 operational parameters are one or two 97M5G7W carriers in the 24.25-24.45 GHz portion of the US n258 spectrum and one to five 97M5G7W carriers in the 24.75 – 25.25 GHz portion of the spectrum.

For a single unit the total RF power can be divided among the one to seven carriers anywhere in the two portions of the spectrum. 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 an independent certification of the FA3UB. The hardware design is unchanged 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.

Equipment Identification:	2AD8UFA3UB01
Rules Part Number:	Part 30
Emissions Designators:	97M5G7W, 198MG7W and 498MG7W (5G-NR LTE-TDD Based)
Frequency Range:	Transmit/ Receive: 24.25-24.45 GHz and 24.75-25.25 GHz
Output Power:	52 dBm EIRP per polarization, 55 dBm EIRP Total Output for 2 polarizations operating in a 2x2 MIMO configuration
	One through Seven Carrier MIMO 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 **FA3UB AirScale 24 GHz Extension Unit**. 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 **FA3UB AirScale 24 GHz Extension Unit** Product Certification Report

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Confidentiality – NDA
Agent Letter

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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's 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	
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