



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

Nokia Global Product Compliance Laboratory
600-700 Mountain Avenue, Room 5B-111

September 9, 2020

Timco Engineering Inc.
 849 N.W. State Road 45
 P.O. Box 370
 Newberry, Florida 32669

Dear Examiner:

The Nokia **PCS RRH 4x30W** was previously authorized for single carrier LTE-TDD operation over the PCS spectrum 1930 – 1995 MHz. The purpose of this Class II Permissive Change application, under AS5BBTRX-22, is to obtain FCC authorization to add 5G-NR operation for 5 MHz, 10 MHz, 15 MHz and 20 MHz bandwidths with corresponding emission designators 5M00G7W, 10M0G7W, 15M0G7W and 20M0G7W, respectively. The PCS RRH 4x30W also supports Concurrent 5G-NR and LTE operation with two and three carriers (contiguous and non-contiguous) for BW of 5 MHz, 10 MHz, 15 MHz and 20 MHz. This change is by software only.

The **PCS RRH 4x30W** operates as 4x30W MIMO (4T4R), with a total composite RF power of 120 W (50.79 dBm). Four modulation schemes are also supported: QPSK (Quadrature Phase-Shift Keying), 16QAM, 64QAM and 256QAM (Quadrature Amplitude Modulation).

This authorization request is for PCS RRH 4x30W Concurrent operation with 5G-NR and LTE utilizing the bandwidths (BW), modulations and emission designators previously cited, and over the PCS spectrum 1930 – 1995 MHz, subject to PART 24— PERSONAL COMMUNICATIONS SERVICES, Subpart E— BROADBAND PCS. The measurement exhibits attached to this application demonstrate full compliance with FCC Part 24, Subpart E, 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:	AS5BBTRX-22
Rules Part Number:	Part 24 Subpart E, Part 24 Emission Limits
Frequency Range:	Transmit 1930-1995 MHz
Output Power:	120 Watts Maximum per Antenna Port 4T4R
Frequency Tolerance:	± 0.05 ppm
Emission Designator:	5M00G7W, 10M0G7W, 15M0G7W and 20M0G7W

Attached are the FCC Form 731 (Application for Equipment Authorization – Radio Frequency Devices), the required measurement data and exhibits specific to this **request for 5G-NR Concurrent operation of the PCS RRH 4x30W**. The technical or non-technical contact at Nokia 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 **PCS RRH 4x30W** Product Certification Report

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Cover Letter

<u>Exhibit #</u>	<u>FCC Rule Number</u>	<u>Description</u>
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Exhibit 2	Section 2.911 (d)	Qualifications and Certifications
Exhibit 10		Test Report
Exhibit 11		Test Setup Photographs