

Date: January 3, 2017

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

Re: Explanation of +8.0dBi Antenna on 900MHz Device

FCC ID: 2AKAAA02SG100  
IC: 22125-A02SG100

To Whom It May Concern:

This declaration letter describes the use of the above-stated optional antenna with the 900MHz device on the equipment bearing the above-stated FCC Identifier and IC Certification Number, and how the respective FCC and IC requirements are met.

FCC Part 15.247 (b)(4) states that *“Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.”*. For the 900MHz device, the stated value in the context of this letter is contained in FCC Part 15.247 (b)(3): 1 Watt or +30dBm. Therefore, to use the +8.0dBi antenna the conducted output power is required to be **reduced by 2dB, to +28dBm**.

The 900MHz device utilizes the Semtec SX1276IMLRT chip, and its transmitter's maximum configurable conducted output power is +15dBm. Adding the +8.0dBi antenna gain, the EIRP is theoretically +23dBm, which is **5dB below** the +28dBm limit set in the above paragraph. Our declaration is further supported by test results provided by QAI Laboratories Ltd. The test results show that the maximum EIRP with the +8.0dBi antenna gain is **+22.61dBm**. Please refer to Page 17 of 94, Table 3, of the Test Report.

The 900MHz device meets the requirement in FCC Part 15.247 (b)(4) by design.

If further explanation or justification is required, please contact the undersigned.

Sincerely,



Tim Strydhorst  
Manager-Research & Development