
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

To Whom It May Concern

Divigraph (Pty) Ltd hereby requests a Permissive Change Class II of the radio equipment certification for the NG Series Industrial Wireless Gateway certification number, FCC ID: 2AOADNG01. This product differs from the originally approved product as described in this document.

The functionality of the NG series gateway as a product has been extended to include collocated Wi-Fi, Bluetooth, and cellular functionality by replacing the associated application processor with a pre-certified System on Module (SoM) as well as adding an additional radio in the form of a pre-certified cellular module.

The original product radio circuitry and output power remains unchanged. Other than associated digital circuitry and cosmetic changes, additional antenna options have been introduced and Bluetooth Low Energy (BLE) functionality has been enabled on the original radio.

To accommodate the higher gain antennas, the last channel used by the industrial wireless protocol has been disabled in the radio firmware to remain within band edge limits.

1. Associated digital circuitry:
 - a. Power supply changed to provide 3.3V output only.
 - b. Addition of a pre-certified cellular module – SIMCom SIM7600G-H-PCIE, FCC ID 2AJYU-8PYA007.
 - c. Application processor changed to a SoM with an integrated pre-certified Wi-Fi and Bluetooth radio module – Laird Sterling-LW5B, FCC ID TFB-1004.
2. Functional capabilities:
 - a. BLE has been enabled on the original Silicon Labs SIL-EFR32MG12 based radio by enabling this mode in the radio firmware. No hardware changes were made to enable the use of BLE.
 - b. Pre-certified 2.4GHz Wi-Fi 802.11 b/g/n and Bluetooth functionality added to the application processor.
 - c. Pre-certified LTE and WCDMA network connectivity added.

3. Antenna characteristics:
 - a. Addition of an 11dBi panel antenna for use with the original radio.
 - b. Addition of an 14dBi Yagi antenna for use with the original radio.
4. Cosmetic differences:
 - a. Enlarged enclosure to accommodate additional radio modules and associated antennas.
 - b. Customer branding, including enclosure color.
 - c. Customer part numbers.
 - d. Customer certification markings.
5. Firmware differences:
 - a. Channel 26 (2480MHz) in 802.15.4 radio mode has been disabled in firmware. As result the frequency range of the radio in 802.15.4 mode has been reduced to only include 15 channels spaced 5MHz apart with center frequencies starting at 2405MHz and ending at 2475MHz.
 - b. Firmware has been updated to enable BLE functionality.

I hereby attest that the conducted RF Output readings of the original radio remain the same or are lower than the originally approved product and that they did not increase therefore qualifying this product for this application type.

Sincerely,



Dennis Naude
Lead Engineer, Systems, Product Design and Engineering
Divigraph (Pty) Ltd