

Federal Communications Commission
 Authorization and Evaluation Division

May 3, 2023

Class II Permissive Change Request for FCC ID: 2ALEPT0004437

We, the undersigned, request a Class II Permissive Change for the Pearl Mobile Gateway, with FCC ID 2ALEPT0004437, in accordance with the permissive change rules presented in KDB Publication 178919 D01 + Notification 202109-001.

The Pearl Mobile Gateway module is a 12VDC powered LoRa gateway designed for IoT applications. Its intended purpose is to provide a carrier grade Gateway solution for LoRa networks. The product is designed to transmit in a North American ISM band (902-928 MHz) using DTS and FHSS modulation.

KDB 178919 D01 section III.D states that the substitution of an electrically identical part may be considered a Class II permissive change under the following conditions:

1. The new chip component is pin-for-pin compatible.
2. The new chip has the same basic function as the old chip, from an external perspective (internal circuitry may differ).
3. No change in radio parameters has occurred.
4. The same conditions apply when a small area (approximately the same area as the chip) of the PCB is replaced with an equivalent chip.

These conditions are met for all of the noted changes in the table below, with the exception for the updated oscillator, which maintains the same functional specifications, fundamental frequency and maximum output power as the previous device, but is not pin-for-pin compatible. Non pin-for-pin compatible part modifications are accommodated by Notification 202109-001 as C2PCPX.

Previous T0004437	Updated T0004437
Crystal-based oscillator.	Updated oscillator to address supply chain concerns. Fundamental frequency, maximum output power and functional specifications remain unchanged.
Clock generator was SI5341A-D08092-GM.	Changed clock generator to TI CDCM6208V1HRGZR.
The GPIO FPGA is from the Intel MAX 10 family, while the FE FPGA is from the Xilinx Spartan-6 LXT family.	The GPIO FPGA is now from the Lattice MachXO3LF family, while the FE FPGA is from the Xilinx Artix-7 family.
The LNA used in the RF system was the NXP MML09231HT1.	The LNA used is now the Qorvo TQP3M9036.
SPDT switch was SKY13321-360LF.	SPDT switch now RFSW8000.
Buck power converter was TPS53513RVET.	Buck power converter is now Maxim MAX20408AFOC.
Detector for VSWR measurements was MAX2016	Detector is now TI LMH2100
Power supplies of note include UWE-5/15-Q12PBC, ISL8022IRZ, TI LM5121.	Power supplies now substituted to RSDW40F05, NCP59771A, TPS611781 respectively.

Sincerely,



Tom Danshin, P.Eng
 Manager, System Design
 TEKTELIC Communications Inc.