

Federal Communications Commission  
 Authorization and Evaluation Division

April 26, 2023

Class II Permissive Change Request for FCC ID: 2ALEPT0004438

We, the undersigned, request a Class II Permissive Change for the Pearl Fixed Gateway, with FCC ID 2ALEPT0004438, in accordance with the permissive change rules presented in KDB Publication 178919 D01 + Notification 202109-001.

The Pearl Fixed 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.

The differences between the updated Pearl Fixed Gateway and the previous Pearl Fixed Gateway components are listed below. The Pearl Fixed Gateway architecture and functionality has not changed from the previous design.

Previous T0004438	Updated T0004438
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 MAX20408AF0C.
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,



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