



Attn: Reviewing Engineer
Federal Communications Commission
Equipment Approval Services
7435 Oakland Mills Road
Columbia, MD 21046

6/1/2021

Subject: Request for Part 15 Limited Modular Transmitter Approval (FCC ID: 2APZK3002)

To Whom It May Concern:

We, Cummins Inc. hereby request for a limited modular transmitter approval of our Pantograph Gateway module. Please observe that integration of the module is to be made by the grantee himself thus limited to own use only the equipment is described as follows:

Brand name: Cummins

Part Number: 5614520

FCC ID: 2APZK3002

In 47 C.F.R. §15.212 there are eight numbered requirements a single modular transmitter must meet to obtain a modular transmitter approval. Our module complies with 7 out of 8 requirements.

1. The modular transmitter must have its own RF shielding

The module has its RF-parts covered by a shield box that is soldered on to the module ground plane.

2. The modular transmitter must have buffered modulation/data inputs

The module ODIN-W2 does not have modulation inputs. The electrical connection consists of power supply, UART, RMII, SPI and digital-I/O. The interface signals (UART, RMII, SPI and digital-I/O) are internally buffered by the module SoC (System on Chip) and cannot affect the modulation. Detailed instruction on how to connect these interface signals are given in the product Users Guide.

3. The modular transmitter must have its own power supply regulation

The module has its own voltage regulators. In case the supply voltage changes, the internal voltages will be kept unchanged.

4. The modular transmitter must comply with the antenna requirements of Section 15.203, 15.204(b) and 15.204(c)

The module is either equipped with on-board chip antenna or unique (U.FL) antenna connector.

5. The modular transmitter must be tested in a stand-alone configuration

The module was tested on a reference design in a stand-alone configuration.



6. The modular transmitter must be labelled with its own FCC ID number

The FCC ID is not on the module since the module will be destroyed if attempted to open as its permanently encased.

7. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements.

The module is compliant with all applicable FCC rules. Detail instructions are given in the product Users Guide.

8. The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.

The RF Module complies with the RF exposure limits when integrated into host devices categorized as mobile and/or fixed.

Thank you for your attention in this matter.

Sincerely,

Dilip Ramachandran

Electrical System Integration Engineer