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Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046 USA

Pre-Approval for Limited Modular Approval, FCC ID: OZFTXG000

To Whom It May Concern:

It is desired to obtain limited modular approval for the Part 15 device FCC ID: OZFTXG000

The device will be integrated into the Tantalus TRUSense Gateway Series product line.

This letter is to address the requirements in 47 CFR Part 15.212(b) regarding modular transmitters that do not meet all of the requirements in Part 15.212(a).

Modular Transmitter Non-Compliance:

The communication device that is seeking modular approval does not have shielding around the front end section (non-compliance to 15.212(a)(1)(i)), and it was not tested in a stand-alone configuration (non-compliance to 15.212(a)(1)(v)).

The non compliance to 15.212(a)(1)(i) was a consciously made choice, since internal testing showed that the fully integrated single IC radio and the transmitter design (and the layout thereof) are such that the transmitter does not generate spuri when influenced by large electromagnetic fields tested with an in-house setup that as best as possible emulates the electromagnetic interference test prescribed by ANSI C12.1 4.7.3.12.1 upto 1GHz.

The non compliance to 15.212(a)(1)(v) was because Tantalus Systems Corp. was of the opinion that by testing the modular transmitter inside the host device that was co-located with another FCC approved transmitter (FCC ID: R68XPICO200), then the intermodulation products generated would be an accurate presentation of the final product. Furthermore, in an effort to create worst case emissions, the testing was performed with the host device in an “open” configuration. This is to say that normally a single phase electric utility meter would be attached to the host, but for all of the radiated emissions testing, this electric utility meter was removed. Analyzing the spurious emissions from the test report will show that the majority of the transmissions are between 270° and 90° which represent the “open” face angles of the host device and therefore strongly represent the worst case behavior of the limited modular transmitter inside the host device.

Compliance of Limited Modular Transmitter Inserted Into Host Devices

Tantalus requests limited modular approval for the FCC ID: OZFTXG000, when inserted into the Host Gateway Series under the following conditions:

- The host external form factor will not change. The polymeric housing complies with strict safety regulatory standards and will not be changed.
- The host internal mechanics comprising of 5 current carrying jaws that will not change. The formation and location of these jaws are strictly defined by ANSI standards and will never change.
- The location of the 3rd party FCC approved transmitter in relationship to the main host PCB will not change.
- The electrical interface between the 3rd party FCC approved transmitter and the main host PCB will not change.
- The location of the limited modular approval transmitter in relationship to the main host PCB will not change.
- The electrical interface between the limited modular approval transmitter and the main host PCB will not change.
- Both the host device and limited modular approval transmitter is manufactured and tested by Tantalus Systems Corp.
- The limited modular transmitter will not be inserted into any other host device that does not comply with the above.

Host Gateway Series

Tantalus is in the process of producing a range of Host Gateway series. The current filing was tested in the first rendition of the series.

The configuration of the host device for which the limited modular approval transmitter was inserted into contains the following:

- 5 port Ethernet Switch
- Gigabit serial Interface
- SFP gigabit optical transducer
- Homeplug RF PLC
- Point on wave voltage and current power quality recorder
- Limited modular approval transmitter (FCC ID: OZFTXG000)
- Dual Band FCC approved WiFi transmitter (FCC ID: R68XPICO200)

There are several enhancements that Tantalus desires to make to the initial gateway device as well as providing the customer with the option to configure the add-on peripherals for cost reasons.

When an enhancement will have an effect on either the AC conducted emissions or unintentional emissions then Tantalus will perform testing at an accredited label to comply with the declaration of conformity outlined in KDB 896810.

When the enhancement involves either changing an approved 3rd party transmitter or adding a further transmitter to the device (for WAN backhaul – as an example), Tantalus will perform a co-location study and submit a new RF exposure exhibit when applying for a Class II permissive change to the limited modular approved device to address the changes.

The envisaged enhancements/options (but not limited to) the gateway series are listed below:

- GPS receiver
- 40W power supply
- Copper Ethernet
- LTE Transceiver

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Fairburn', with a horizontal line extending to the right.

Mark Fairburn
Sr. RF Design Engineer
Tantalus Systems Corp.