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Attn: Director of Certification

FCC ID: QASRA-R426-01

Request for Limited Modular Approval

15.212(a)(1) Single modular transmitters must meet the following requirements to obtain a modular transmitter approval.

(i) The radio elements of the modular transmitter must have their own shielding. The physical crystal and tuning capacitors may be located external to the shielded radio elements.

All radio elements are self-contained in the microcontroller/transceiver IC (model CC2541) and only the physical crystal and balun are located externally to such.

(ii) The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with part 15 requirements under conditions of excessive data rates or over-modulation.

The microcontroller firmware buffers the data inputs and ensures that the module complies with part 15 requirements for all possible inputs.

(iii) The modular transmitter must have its own power supply regulation.

The module has on-board power supply regulation for the transceiver.

(iv) The modular transmitter must comply with the antenna and transmission system requirements of 15.203, 15.204(b) and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). The "professional installation" provision of 15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.

The module employs a chip antenna which is physically soldered to the PCB. There is no

means provided for an end user to modify or change the antenna.

(v) The modular transmitter must be tested in a stand-alone configuration, i.e. , the module must not be inside another device during testing for compliance with part 15 requirements. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see §15.27(a)). The length of these lines shall be the length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified and commercially available (see §15.31(i)).

The modular transmitter was tested in a stand-alone configuration. The module accepts DC power which may be provided by a battery or another source. The module connects to power and data lines via a standard RJ-45 jack which accepts standard, commercially available Cat5e cables. These cables do not contain ferrites.

(vi) The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number.

(A) If using a permanently affixed label, the modular transmitter must be labeled with its own FCC identification number, and, if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

(B) If the modular transmitter uses an electronic display of the FCC identification number, the information must be readily accessible and visible on the modular transmitter or on the device in which it is installed. If the module is installed inside another device, then the outside of the device into which the module is installed must display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC certified transmitter module(s)." Any similar wording that expresses the same meaning may be used. The user manual must include instructions on how to access the electronic display. A copy of these instructions must be included in the application for equipment authorization.

The module complies with the labeling requirements of A. A sticker is permanently affixed to the PCB. The FCC identification number is either affixed as a label, or etched, to the enclosure.

(vii) The modular transmitter must comply with any specific rules or operating requirements that ordinarily apply to a complete transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization.

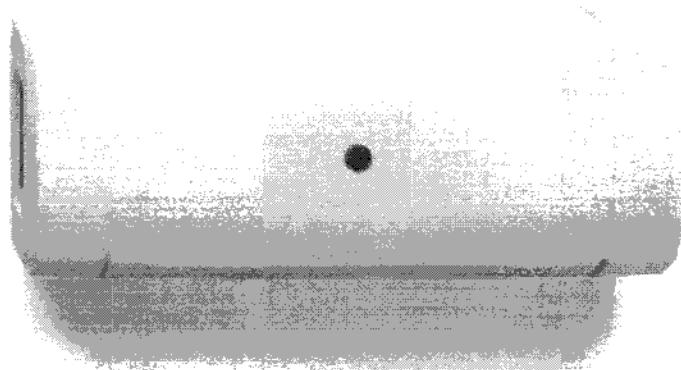
This module complies with the requirements of part 15.247 for operation in the 2400-2483.5MHz frequency band.

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

The module will be used as a standalone device. In this configuration it is not subject to RF exposure requirements.

15.212(b) A limited modular approval may be granted for single or split modular transmitters that do not comply with all of the above requirements, e.g., shielding, minimum signaling amplitude, buffered modulation/data inputs, or power supply regulation, if the manufacturer can demonstrate by alternative means in the application for equipment authorization that the modular transmitter meets all the applicable part 15 requirements under the operating conditions in which the transmitter will be used. Limited modular approval also may be granted in those instances where compliance with RF exposure rules is demonstrated only for particular product configurations. The applicant for certification must state how control of the end product into which the module will be installed will be maintained such that full compliance of the end product is always ensured.

The modular transmitter is compliant with all criteria for singular modular approval except for 15.212(a)(1)(i) due to the fact that it does not have its own shielding. Nonetheless, compliance of any end product is ensured due to the fact that the modular transmitter itself is always housed alone in a plastic enclosure similar or equivalent to the one shown below, and duly labeled as per 15.212(a)(1)(vi). In other words, the modular transmitter is isolated and cannot interfere with or receive interference from other equipment in proximity.



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