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REF: DivBee
FCC ID: X5L-XPSA24
IC: 8829A-XPSA24
Subject: 15.212 Modular Transmitters

(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.

*Answer: Besides having all components fully encased in a metal EMI/RFI shield, the transmitter board layout makes effective use of multi-level ground planes to limit the effects of external electromagnetic fields. The host equipment that the radio module is used with only emits low energy fields that do not impact the radio's operation.*

(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.

*Answer: Control of the radio's modulation and data characteristics are fixed and determined solely by the RF chip contained in the radio module. External control is required in invoke all transmission and reception capabilities.*

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

*Answer: The radio module utilizes three on-board linear regulators to condition its supply power, one outside of the RF transceiver chip, and two integrated into the RF transceiver chip.*

(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.

*Answer: This radio module uses a FCC recognized unique coupler for its antenna connection.*

(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)).

*Answer: The transmitter module was tested in a standalone configuration. There were no ferrite filters on the conductors supplying power to the module during compliance testing. The lengths of the supply conductors were greater than 10cm.*

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

*Answer. The FCC ID label is part of the silkscreen layer of the circuit board and cannot be removed once the board is manufactured. A copy of this label has been submitted with the module application, and the labeling information is also included in the user manual as required due to the size of this device.*

(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.

*Answer: The radio module requires commands from an external microcontroller. The manufacturer includes written instructions regarding the RF transceiver used in this product and how to obtain information on controlling this device.*

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

*Answer: Please Reference the SAR Not Required Documentation (per mobile classification).*

Sincerely,

Jim Drew, CEO/President - Xtreme Power Systems