

Date: 10/10/17

REF: ATCB021580
FCC ID: NZLMAHL5B

Subject: Limited 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: This transmitter does not have shielding, but the module will be tested before production to ensure compliance once installed in the final assembly. This module is not intended for any other configuration and will be monitored if this module is installed in a different configuration by the host via an automated system of the OEM.

(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: This transmitter does not have external data inputs. The module has hardware and software controls to limit the data rate allowed for "training" the device. The maximum data rate in theory is 74.5kHz though the fastest signal we train to in practice is 20kHz. Also, the module is intended for use with Part 15 devices certified at the applicable frequencies only.

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

Answer: Yes, the transmitter does have its own power supply regulator.

(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: The transmitter utilizes a permanent PCB trace 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)).

Answer: The device was tested in a stand-alone configuration and is DC powered so AC line conducted measurements are not required. The harness length tested was 2m since the typical use harness length is unknown.

(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 device has been affixed with a permanent label with the required FCC identification number.

(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.



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Answer: The user manual includes a statement regarding changes or modifications of the device, which could affect compliance or exposure limits as described in the FCC rules.

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

Answer: The module power settings will be locked via software so the host manufacturer cannot increase the output power. In addition, we will be performing additional testing to confirm compliance with the module in the final assembly.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Harder", written over a faint, illegible printed name.

Craig Harder
EMC Lab Manager
Gentex Corporation