



**SOLVING A WAVE OF EMI COMPLIANCE PROBLEMS**

August 5, 2013

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Federal Communications Commission  
Authorization and Evaluation Division  
**APPLICANT: Horizon Hobby, Inc.**

**REFERENCE FCC ID: BRWDAMTX12**

**RE: Request for Modular Approval**

Industry Canada  
Authorization and Evaluation Division

**REFERENCE Industry Canada ID: 6157A-AMTX12**

**RE: Request for Modular Approval**

Radiometrics has been authorized by Horizon Hobby to act as an agent in the preparation of their submittal request for Modular Approval.

Modular approval Requirements Characteristics: FCC Part 15

Item	Requirement	EUT Justification
1	Have its own RF shielding	<b>The RF portions of the module are completely contained within a metal shielding can. The module does not depend on any other shielding.</b>
2	Have buffered modulation/data inputs (if such inputs are provided),	<b>All data communication with the module is digital. A microprocessor then converts the digital information into the analog RF signal.</b>
3	Have its own power supply regulation	<b>The module has on-board voltage regulation which allows it to accept input power between 4-volts and 10-volts DC.</b>
4	Meet the antenna requirements of Section 15.203	<b>The module and antenna design is not user serviceable. It utilizes non-standard micro-coaxial connectors and antennas with approximate gain of 1.5 dBi.</b>
5	Be tested in a stand-alone configuration, i.e., the antenna, AC or DC power and data input/output lines must be connected to the module but, the module must not be inside another case during testing	Device was tested with an DC power supply. It had no additional shielding.
6	Be labeled with its own FCC ID number, and if the FCC ID 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.	<b>The FCC ID label format is included in the filing. The product will always be inside another enclosure during actual use. A label will be placed on the outside of the product if the FCC ID is not visible</b>

Item	Requirement	EUT Justification
7	The modular transmitter is manufactured so that the user cannot influence the operation of the transmitter that will operate outside of the scope of the regulations.	<b>Frequency selection is controlled by the product's software configuration, which is not user configurable or accessible.</b>
8	Address compliance with the Commission's RF exposure limits in Sections 1.1310 and 2.1093. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF exposure compliance in accordance with Section 15.247(b)(4).	Example Refer to RF exposure Exhibit. The transmitter meets MPE calculations of 47 CFR 1.1310.

Modular approval Requirements Characteristics: RSS-Gen Section 7.1.1

Item	RSS-Gen EUT Requirement	EUT Justification
(a)	The module must be a complete radio transmitter with its own reference oscillator, antenna, etc. The only connectors to the module, if any, are power supply and modulation/data inputs.	<b>The module meets this requirement.</b>
(b)	The module has its own RF shielding.	<b>The RF portions of the module are completely contained within a metal shielding can. The module does not depend on any other shielding.</b>
(c)	The module must have buffered modulation/data input(s) (if such inputs are provided) to ensure that the module will comply with RSS-210 requirements under conditions of excessive data rates or over-modulation.	All inputs to the module are buffered and processed through logic
(d)	The module has its own power supply regulation. This is to ensure that the module will comply with RSS-210 requirements regardless of the design of the power supplying circuitry in the host device which houses the module.	All power supplies on the board, 3.05V, 1.73V, 1.15V, are provided/regulated from the PMIC. The PMIC receives power either from the battery or from the host interface (5V over USB). Refer to the Block Diagram.
(e)	The certification submission contains a detailed description of the configuration of all antennas that will be used with the module.	Two 1/4 wave dipole antenna are used. See theory of operation

Item	RSS-Gen Testing Requirement	EUT Justification
(a)	The host device, as a stand-alone unit without any separately certified modules, complies with all applicable Radio Standards Specifications.	<b>The host device meets this requirement.</b>
(b)	The host device and all the separately certified modules it contains jointly meet the RF exposure compliance requirements of RSS-102, if applicable.	Refer to RF exposure Exhibit. The transmitter meets RSS-102. The antenna gain is less than 6 dB
(b)	The host device complies with the certification labeling requirements of each of the modules it contains.	<b>The host device meets this requirement.</b>

This product will not be sold to the general public as a module. It will only be installed in Horizon Hobby products.

Please do not hesitate to contact me if there are any further questions.

Sincerely,



Joseph Strzelecki, NCE  
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