WiQuest™

WiQuest Communications, Inc.
915 Enterprise Blvd, Suite 200
Allen, Texas 75013

Cover Letter Requesting Modular Approval

May 15, 2007

Chief, Authorizations Branch
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

Re: WiQuest Communications, Inc. Cover Letter Requesting Modular Approval
FCC ID: TZQWQ110MC

To Whom It May Concern:

The purpose of this cover letter is to request modular approval from the Federal Communications Commission (FCC) for the WiQuest Communications Mini Card.

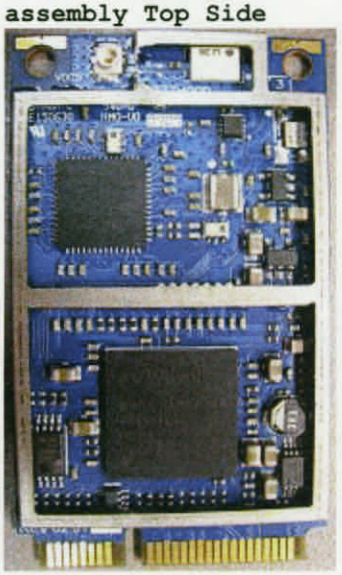
WiQuest Communications Inc. is addressing the eight requirements in our application for Modular Transmitter Authorization, per the FCC Second Report and Order FCC 07-56 Section A - "Single Unit Modular Transmitters."

1. The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.

   The 'Module' to be considered for certification consists of a PCB assembly and associated antenna/cable assembly. These two assemblies together comprise the 'Module.' The images below show the Single Sided PCB assembly with all of the associated components under an RF shield. In addition, all RF Traces are routed on top layer under the RF shielding.

WiQuest Module PCB assembly

WiQuest Module PCB assembly Top Side



WiQuest Module PCB assembly Bottom Side

2. 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 WiQuest Wireless USB Mini Card has Differential I/O buffers for the USB Modulation/data inputs on the WQST110 IC.

3. The modular transmitter must have its own power supply regulation. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed.

   The WiQuest Wireless USB Mini Card is supplied with 3.3 Volts on the PCIE Mini Card Host connector. The WiQuest Wireless USB Mini Card has its own power supply regulation.

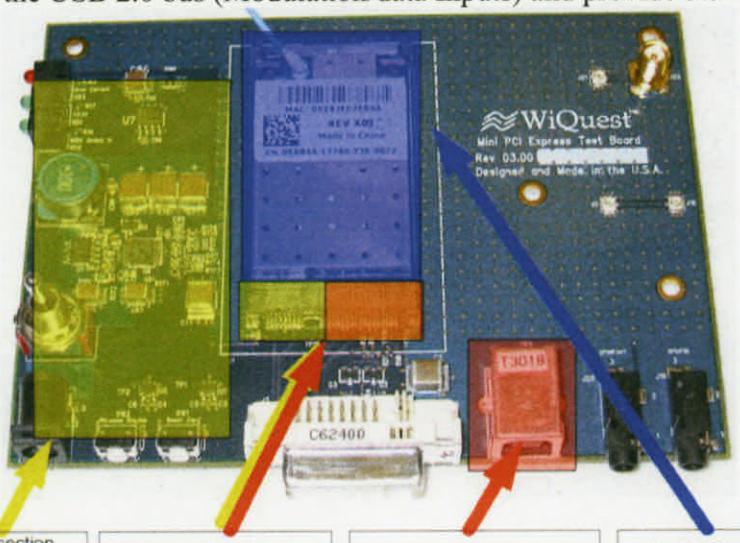
4. The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be approved with the module, either at the time of initial authorization or through a Class II permissive change. The "professional installation" provision of Section 15.203 may not be applied to modules.

   Four antennas were initially tested for approval with the WiQuest Wireless USB Mini Card. Each antenna was tested for both out-of-band and in-band emissions.

The Antenna Assemblies for the four different antennas (antenna element and cable) associated with the WiQuest Wireless USB Mini Card are identical to the ones that are to be used inside the Notebook PC.
The Antenna will be permanently attached to the WiQuest Wireless USB Mini Card using a unique antenna receptacle and mating connector on the Antenna Assembly.

5. The modular transmitter must be tested in a stand-alone configuration, *i.e.*, the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emissions limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 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 Section 15.27(a)). The length of these lines shall be 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 or commercially available (see Section 15.31(i)).

The WiQuest Wireless USB Mini Card was tested in stand-alone configuration using the WiQuest Test Fixture. As shown below the Test fixture is used to communicate to the Mini Card Module via the USB 2.0 bus (Modulation/data Inputs) and provide 3.3 Volts to the connector.



Power Supply section. This area of the Test Fixture converts the wall mount power supply to 3.3V – in a similar fashion as a Notebook PC would convert to 3.3V to supply to the Module via the Standard Connector shown on the Test Fixture.

Power Supply and Modulation Inputs for the WiQuest module. The connector on the Test fixture is identical to the connector that will be used in the Notebook PC when this module is installed.

The WiQuest Module has buffered USB Modulation data inputs on the WQST110 IC. The connection to the Notebook PC is exercised through the USB Connector on the Test Fixture.

The WiQuest Module is supplied with 3.3V on the test fixture or the Final Notebook PC (Enclosure). The WiQuest Module has its own power supply regulation All parts are on top side of the PC board and all parts are under the RF Shielding.

6. The modular transmitter must 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. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODLE1." 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 the requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

   The WiQuest Wireless USB Mini Card comes with two proposals for placement of FCC ID labels. One label is placed directly on the RF shield of the Mini Card top side. The second label is example instructions for placement on the enclosure where the WiQuest Wireless USB Mini Card is to be installed.
   The information is included in both the FCC Label Guidelines document and the WiQuest Wireless USB Mini Card User guide.

Exterior FCC Label on the PC

IMPORTANT: Please remove the FCC label supplied with the kit and affix it to the bottom side of the Notebook.

Contains Transmitter Module
FCC ID: TZQWQ110MC

7. The modular transmitter must comply with any specific rule or operating requirements applicable to the 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. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for operation under Section

15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured.

The Operational Limitations of the WiQuest Wireless USB Mini Card are listed in both the User Guide and Test Report.

8. The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. 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). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.

   The WiQuest Wireless USB Mini Card complies with the Maximum Permissible Exposure for mobile devices. The Compliance Test Report list the power density of the WiQuest Wireless USB Mini Card at 0.0211mW/cm^2 which in turn is 47 times below the maximum permissible exposure limit of 1mW/cm^2.

Sincerely,

Jovica Jovanovski
Director, Hardware Development
WiQuest Communications, Inc.
915 Enterprise Blvd. Suite 200
Allen, TX 75013
Tel. 214.547.1600 x122