April 24, 2012

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

Subject: Request for unlicensed Modular Transmitter Approval U9YHS6621.

Reference: FCC 07-56A1 47 CFR 15.212

To Whom It May Concern:

Alereon, Inc. hereby requests FCC Equipment Authorization as a Singular Modular Transmitter of the Alereon, Inc. Model HS6621 UWB Module, FCC ID: U9YHS6621. Alereon, Inc. intends to manufacture this device and market it as a computer modular component. This letter addresses the information required by points one through eight of 47 CFR 15.212.

1. The modular transmitter must have its own RF shielding. Shielding necessary for normal operation is accomplished by a metal shield enclosure which attaches to the printed wiring board and encloses the RF circuitry, including the frequency-determining element.

2. The modular transmitter must have buffered modulation/data inputs. The Alereon HS6621 receives data via the industry-standard USB 2.0 interface. This digital interface limits the data rate and modulation.

3. The modular transmitter must have its own power supply regulation. The Alereon HS6621 receives power from the host system. The +3.3 Volt source from the host system is filtered on the module to power a +3.3V domain and regulated on the module to produce the main +1.2V digital subsystem domain. The +3.3V domain is also regulated on the module to produce two additional power domains required by the module circuitry; +2.4V and +1.2V. The power regulation topology may be seen on sheet six of the schematic diagram included in the filing for FCC Equipment Authorization.

4. The modular transmitter antenna must comply with the antenna and transmission system requirements of sections 15.203, 15.204(b) and 15.204(c). The antenna of the Alereon HS6621 UWB Module is one of two types: both types being monopole antennas, part numbers UWBH-001 and UWBH-002, which attaches to the HS6621 by a 40mm coaxial cable with a type U.FL connector. These two antennas have essentially the same gain and coverage pattern and are electrically equivalent differing only in their sensitivity to ground plane and other conducting objects. Tow antennas are certified to allow the user to have alternatives for different products installations. The antenna is intended to be permanently attached to or within the product housing and the connector

is not accessible to the user. The U.FL connector complies with the requirement of FCC 15.203 for a unique coupling.

5. The modular transmitter must be tested in a stand-alone configuration. As described in section 2.6.3 of the test report included in the filing for FCC Equipment Authorization, the HS6621 UWB Module plus antennas was tested without a housing. For the tests reported the module was attached to an Alereon designed test environment which provided power and a USB interface to the controlling computer.

6. The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number. The Alereon HS6621 is intended to be placed within the host system enclosure unique to the brand I.D. of the host system. The prescribed label with the FCC Identifier will be applied to the outside of the host system housing. Additionally, the module will have a label affixed which includes the FCC identifier. An example of the label which will be used is included in the filing for FCC Equipment Authorization.

7. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter. Part 15.519 of the FCC rules and Regulations requires that a UWB transmitter shall transmit only when it is sending information to an associated receiver. That rules part also requires that the UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting. This requirement is met by design and is implemented by the firmware encoded into the device.

8. The modular transmitter must comply with any applicable RF exposure requirements in its final configuration. There are no RF exposure requirements for UWB devices operating under subpart F of the FCC Rules and Regulations.

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