

May 13, 2008

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

Subject: Request for unlicensed Modular Transmitter Approval.

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 AL5604 UWB Module, FCC ID: U9YAL5604. Alereon, Inc. intends to manufacture this device and market it under several brand names and brand I.D.s 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. All shielding necessary for normal operation is accomplished by the multi-layer construction of the printed wiring board which incorporates multiple ground layers in its construction. As this transmitter is designed to operate stand-alone in its own enclosure, connected to an industry-standard USB interface, no additional shielding is incorporated to minimize coupling such as may occur if the module were incorporated into another unit.

2. The modular transmitter must have buffered modulation/data inputs. The Alereon AL5604 receives data via the industry-standard USB 2.0 interface. This USB interface is implemented within the SMSC-USB3300 integrated circuit as may be seen on sheet three of the schematic diagram included in the filing for FCC Equipment Authorization. The USB interface limits the data rate to those defined by the USB standard.

3. The modular transmitter must have its own power supply regulation. The Alereon AL5604 receives power from the host system via the USB 2.0 interface. The +5.0 Volt source from the host system is regulated on the module to power a +3.3V domain and 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 nine 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). One of two antennas from different manufacturers is employed with the Alereon AL5604 as alternate constructions. The two antennas have equivalent electrical characteristics and the same shape and general appearance. The antenna is either an ACON ADM6P-700042 or an Omron WXA-N1SF. Either antenna connects to the AL5604 via a type U.FL connector and this connection is entirely within the plastic enclosure. The antenna is not

removable by the user. The compliance test report contains data taken with each type demonstrating compliance with FCC requirements.

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 AL5604 UWB Module plus antenna was tested without a plastic housing, connected to the USB port of a P.C. as it is intended to operate. The AL4504 is designed with an industry standard USB 2.0 Type-A connector as its electrical and mechanical interface to the host system. This connector defines the deployment of the module which is intended to be directly connected to the host system via the USB interface.

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 AL5604 is intended to be placed within a plastic enclosure unique to the brand I.D. under which it is being marketed. The prescribed label with the FCC Identifier will be applied to the outside of the housing. 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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