Subject: **FCC 15-407c : Automatic Discontinuation of Transmission** Date: **September 24, 2004**

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TRANSMIT DISCONTINUATION:

FCC 15.407c guidelines require that a Wireless LAN device automatically discontinue transmission when there is no information to send or if there is an operational failure. The text of the FCC requirement is as follows:

> (c) The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

IMPLEMENTATION:

Figure 1 shows the block diagram of a Wireless LAN card based on the Agere chipset. This chipset includes, from left to right, the WL60040 Media Access Controller (MAC), the WL64040 Baseband Processor, the WL54040 RF transceiver and the WL54240 Power Amplifier.

Agere's solution follows the normal 802.11 MAC protocols that dictate how and when a Wireless LAN card gets access and transmits over the medium. Agere complies with the Distributed Coordination Function (DCF) architecture and the CSMA/CA (Carrier Sense Multiple Access / Collision Avoidance) scheme that permits Wireless LAN cards to access the airwaves in an orderly fashion and transmit only when the have a valid transmit frame to send.

In addition to the normal MAC protocols there is also a mechanism in place whereby the WL64040 Baseband Processor is effectively muted unless the TXE (Transmit Enable) signal from the MAC is asserted. The TXE signal is shown in Figure 1 as an output going from the WL60040 MAC to the Baseband. The Baseband will not transmit unless the TXE signal from the MAC is asserted. If the TXE is de-asserted for any reason before the end of the current transmitting frame, the Baseband will abort the transmission. Hence, the control for transmission lies in the MAC via the TXE signal. This ensures that there are no random transmits.

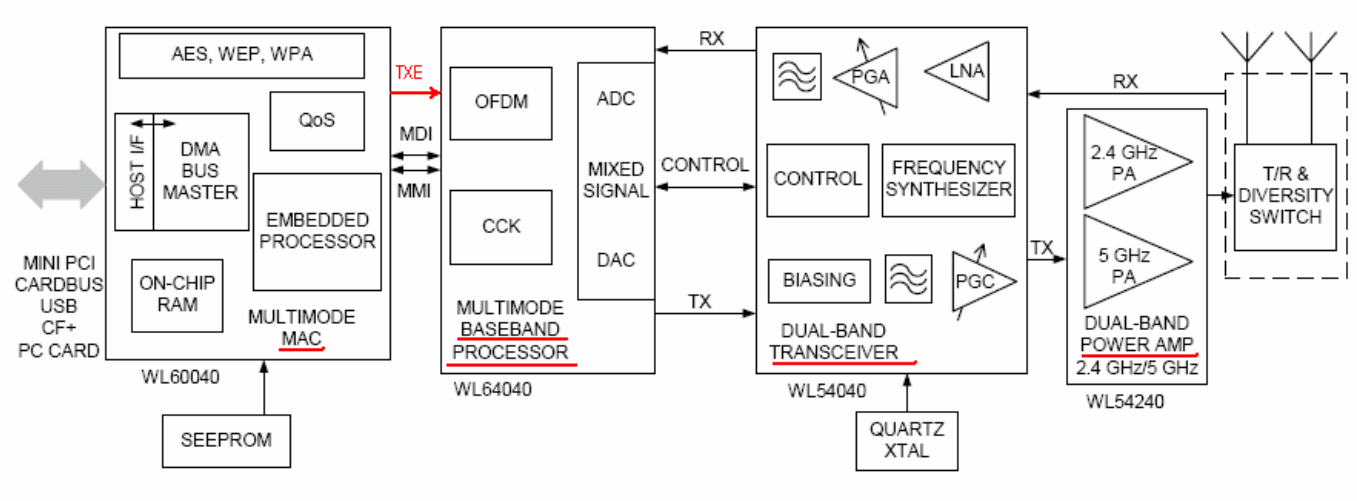

Figure 1. Block diagram of the Agere Wireless LAN system including TXE signal.